

34
5,009
10,963
6,827
17,144
9,928
30,513
12,839
42,093
72,75
76,43
34,273
136,526
2,925
13,133
12,997
52,024
1,848
6,938
6,794
26,236
9,709
38,195
47,112
178,619
51
179
42,606
159,031
203
203
April
4 mos.

Published every Saturday by the
Simmons-Boardman Publishing
Company, 1309 Noble Street,
Philadelphia, Pa., with editorial
and executive offices: 30 Church
Street, New York, N. Y., and 105
West Adams Street, Chicago, Ill.

SAMUEL O. DUNN, *Chairman of Board*
HENRY LEE, *President*
LUCIUS B. SHERMAN, *Vice-Pres.*
Cecil R. Mills, *Vice-Pres.*
ROY V. WRIGHT, *Vice-Pres. and Sec.*
FREDERICK H. THOMPSON, *Vice-Pres.*
GEORGE SLATE, *Vice-Pres.*
ELMER T. HOWSON, *Vice-Pres.*
F. C. KOCH, *Vice-Pres.*
JOHN T. DEMOTT, *Treas.*

CLEVELAND
Terminal Tower

WASHINGTON
832 National Press Building

SAN FRANCISCO
58 Main St.

Editorial Staff

SAMUEL O. DUNN, *Editor*
ROY V. WRIGHT, *Managing Editor*
ELMER T. HOWSON, *Western Editor*
H. F. LANE, *Washington Editor*

B. B. ADAMS
C. B. PECK
W. S. LACHER
ALFRED G. OEHLE
F. W. KRAEGER
E. L. WOODWARD
J. G. LYNE
J. H. DUNN
D. A. STEEL
R. A. DOSTER
H. C. WILCOX
NEAL D. HOWARD
CHARLES LAYNG
GEORGE E. BOYD
WALTER J. TAFT
M. H. DICK

The *Railway Age* is a member of
the *Associated Business Papers* (A.
B. P.) and of the *Audit Bureau of*
Circulations (A. B. C.).

Subscriptions, including 52 regular
weekly issues, payable in advance
and postage free; United States and
possessions, 1 year \$6.00, 2 years
\$10.00; Canada, including duty, 1
year \$8.00, 2 years \$14.00; foreign
countries, 1 year \$8.00, 2 years
\$14.00.

Single copies, 25 cents each.

Railway Age

With which are incorporated the *Railway Review*, the *Railroad Gazette*
and the *Railway Age-Gazette*. Name registered U. S. Patent Office.

Vol. 96

June 16, 1934

No. 24



In This Issue

Economic Life of Steam Locomotives and Cost of Repairs... Page 864

An article on Co-ordinator Eastman's report dealing with locomotive repair costs and their relationship to the age and size of steam locomotives.

Large Increases in Railway Buying..... 875

An interpretation of data which shows how improved earnings and P.W.A. loans are encouraging roads to release heavier orders for supplies and equipment.

What Has Happened—A Review of Railway Supply Work..... 880

Introduces a group of articles devoted to the past year's events which have required extensive mobilization of supply forces to meet new problems.

EDITORIALS

Planning for Rebuilding Business.....	861
Mr. Eastman Rides His Hobby.....	863

GENERAL ARTICLES

Economic Life of Steam Locomotives and Cost of Repairs.....	864
Sheer Booms Embody Unique Features.....	867
Plan for Simplification of Interline Freight Accounting.....	869
Freight Car Loading.....	870
"Port of Entry" Law Successful.....	871
Bill to Amend Labor Act Reported.....	872
Revised Rail Pension Bill Reaches Debate Stage in Senate.....	873
Large Increases in Railway Buying.....	875

A REVIEW OF RAILWAY SUPPLY WORK..... 880

The Federal Co-ordinator and Purchasing Practices.....	881
A Busy Year for the Supply Division, by G. E. Scott.....	883
Purchases & Stores Division Holds Annual Meeting.....	886

COMMUNICATIONS 892

ODDS AND ENDS..... 894

NEWS 895

The *Railway Age* is indexed by the *Industrial Arts Index* and also by the
Engineering Index Service



A SAFE GUIDE to GOOD MATERIALS

• • •

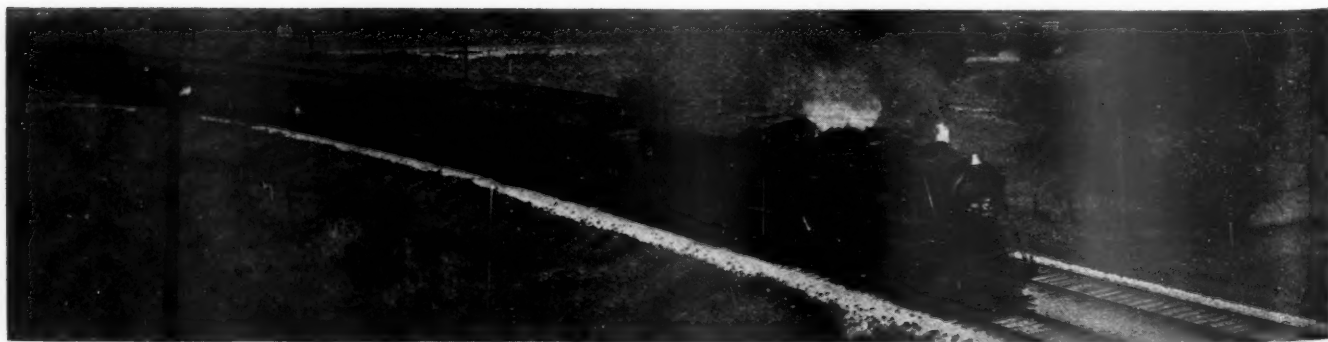
One of these number plates is located on the smokebox of your Baldwin locomotive.

When ordering spare or repair parts, specify the number appearing on your plate. It will facilitate the handling of the order and insure the supplying of proper materials—built to fit *your* particular locomotive.

Our experience in building locomotives makes it possible for us to choose and furnish the type and quality of materials best suited for economical locomotive performance.

The true cost of locomotive spare and repair parts is not what they cost originally, but what they cost per mile of service. It always pays to buy good materials.

Even from the point of view of first cost, we are prepared to quote competitive figures for high grade materials and workmanship.



THE BALDWIN

RAILWAY AGE

Planning for Rebuilding Business

Every business in the country which is to survive the depression is, or soon will be, in process of being rebuilt. Individual concerns will not "come back" merely because of improvement of general business, but because of efforts to bring them back. This is equally true of large and small businesses. It is as true of the railroads as of concerns of other kinds.

For almost three years the trend of general business was steadily and rapidly downward. For almost two years it has now been upward. It declined more in some lines than others, and has improved more in some than others. In the durable goods industries generally the decline was the greatest and the improvement has been the smallest. Improvement has, however, occurred in almost all lines. Freight car loadings are the result of every kind of production and commerce. Relatively there was a decline of loadings in April and May. They were 62.3 per cent of the 1925-1929 average in the first quarter of this year, and only 60.5 per cent of it in April and May. They were, however, 19 per cent greater in the five months than in the first five months of 1933, and relatively 28 per cent larger than in June, July and August, 1932, when the real bottom of the depression was reached.

Since the upward trend of general business began in the late summer of 1932 there have been three minor recessions—in the first quarter of 1933, in the fall of 1933, and the one that has been occurring since March; but that the general trend has been constantly upward is shown by the fact that each recession has been followed by a relatively greater improvement. While trying to recover, business has been subjected to unusual handicaps. These have included certain New Deal policies, and, recently, the worst drouth in history. That its general trend has continued upward is the best evidence of the power of the natural forces of recovery which began effectively to operate in the fall of 1932. It seems not unlikely that after the minor recession now occurring another marked improvement will occur in the fall.

Planning Increased Expenditures

The process of rebuilding business consists of efforts both to stimulate its upward trend and to take advantage of, and prepare for, its improvement. No major

industry is confronted with more numerous or difficult problems in this process of rebuilding than the railroad industry. They are problems both of the industry and of individual railroads. They are problems of finance, rehabilitation, modernization, regulation, competition, sales and public relations. They differ from the problems of other industries because of the unusual kinds of regulation and competition to which the railroads are subject.

The principal differences between the reconstruction problems of small and large concerns are differences of size, not of kind. As their earnings increase some of their expenses automatically increase. Others are voluntarily increased to improve properties or service or to enlarge sales. It is these latter and more flexible classes of expenses that present the real problems. Shall retrenchment be continued in order to increase net earnings as much as practicable, or shall expenses be voluntarily increased, and, if so, how much and for what purposes? In order to answer this question satisfactorily it seems desirable that each company, and even each industry, should adopt a definite and comprehensive plan to increase expenses in some proportion to increases in earnings, and to pro-rate the increases between different purposes in accordance with their importance.

In making and carrying out such plans the constant compilation and use of statistics is essential. Some persons depreciate statistics. The right kind of statistics are, however, merely the available facts reduced to convenient units. Those who minimize their value minimize the importance of knowing facts. If ever there was a period which emphasized the importance of conducting every kind of business in accordance with definite plans based on sound principles and adequate information it has been the last decade. Never during any period did so many businesses come to grief because of a lack of definite planning based on experience, sound principles and adequate information.

Regaining Lost Business

The principal problem of the railroads, like that of most industries, is the regaining of lost business. For the railroads, however, it is a peculiar problem because so much of their business has been lost owing to govern-

ment-aided outside competition. After having seen their passenger business decline for a decade they have begun to recover it. At the end of the first quarter of this year it had increased for ten consecutive months. The trend of their freight business also has been upward for almost two years. Nevertheless, their gross earnings in the first quarter of this year were still 46 per cent less than in the first quarter of 1929. At that rate they would be \$2,900,000,000 less this year than in 1929.

Most of their loss of business has been due to the depression, but large losses owing to outside competition began and continued at an accelerating rate for almost a decade before the depression. Their accumulated effect may have been as great during the years of depression as the effect of the depression itself. The railways now have a plant capable, if rehabilitated merely to offset the effects of obsolescence and deferred maintenance, of handling three times their present volume of traffic. With such a volume, and with only reasonable advances in wages and prices of materials and supplies, they could effect large reductions in their unit costs of operation and in their rates. Important as would be the recovery of traffic that would be restored by the termination of the depression, hardly less important would be the recovery of that lost to other carriers because of government subsidies and unequal regulation.

The recovery of traffic that the railways are best fitted to handle requires changes in laws, service and rates. To get the needed changes in federal and state laws demands better organized and stronger efforts by railway companies and their employees, who are equally concerned. The efforts thus far made have not included enough research. Nobody knows today how much of the nation's transportation bill is being paid in taxes used to subsidize competitors of the railways, but enough research has been done to indicate that complete research would demonstrate it to be a staggering amount. It presents a tax as well as a transportation problem. If no other agency will ascertain the facts the railroads should provide the organization and money necessary to do it thoroughly. The ascertainment and dissemination of the facts regarding the subsidization of transportation would shock the tax-paying public into a reduction of the subsidies. The advocacy of equal state and federal regulation should be continued with increased energy. A restoration to the railroads of the traffic they are best fitted to handle is essential to their rebuilding as the most efficient and economical means of transportation, as employers of labor, and as customers of the durable goods industries.

Rehabilitation and Needed Capital

The rehabilitation of railroad physical properties has begun, although only begun. They employed an average of 62,218 more persons in the first five months of 1934 than in 1933, and 104,658 more in May than in May, 1933. They increased their purchases from manufacturers, including equipment as well as ma-

terials and supplies, from about \$95,000,000 in the first five months of 1933 to about \$225,000,000 in 1934, or 137 per cent; and these expenditures include only part of the total to be made with money borrowed from the government. Developments started by air-conditioning, the Burlington and Union Pacific light-weight, streamline trains, the increased interest in Diesel engines, improvements in steam engines, the use of new materials to lighten all equipment and various improvements in track and signaling, indicate that the only thing needed to insure radical changes in railroad facilities to adapt them to changed and changing conditions is the ability to make increased net earnings and raise needed capital.

Unfortunately, certain government policies present new difficulties to the railroads as well as other large industries. They raise a question as to whether a fair return will be allowed to be earned upon either old or new investments. They hinder the issuance of securities by companies which otherwise would have enough credit. In no document ever published has the importance of making it easy rather than difficult to raise capital for private industry as a means of restoring and maintaining prosperity ever been more clearly demonstrated or strongly emphasized than in the report made by the Durable Goods Industries Committee to President Roosevelt on May 14. The railroads are among the industries increased buying by which with increased net earnings and new capital is the most essential to the revival of business and employment in the still severely depressed durable goods industries.

Railroad Net Determines Buying

The government could stimulate the rebuilding of the railways and the revival of the durable goods industries by increasing its loans to the railroads. Experience demonstrates, however, that year by year, and even almost month by month, railroad buying from manufacturers is determined principally by the amount of net operating income earned. Therefore, the rehabilitation and improvement of the railways will depend principally upon increases in their net operating income, and upon government policies which will encourage, not discourage, owners of capital to invest in the securities of railroads and other private industries.

The railroads as an industry, and every individual railroad, should be making definite plans to rehabilitate and improve themselves as rapidly as increased earnings make it reasonably practicable. The trouble with the government's "planned economy" has not been that planning is not desirable, but that it has been planless planning. It has been intended to punish business as much as to help it. It has not been based upon ascertained facts, experience and sound principles, but has consisted of a series of amateur extemporizations which have produced bedlam, uncertainty and fear. Fortunately, in spite of Co-ordinator Eastman's government ownership complex, there has been more real government fact-finding as a basis for future transportation policies than for policies affecting any other

industry; and if planning for the transportation industry by government as well as by managements is to be based on facts and conclusions logically derived from them the railroads have a good future.

Mr. Eastman Rides His Hobby

Mr. Eastman continues to perform brilliantly and effectively the duties of Federal Co-ordinator. The kind of fundamental research into railway methods upon which he and his staff are engaged is proving more fruitful and illuminating than even the very sanguine could have hoped. The reports which he and his organization have issued upon the regulation of competing carriers, upon the locomotive situation and dealing with the handling of l.c.l. freight, as well as the numerous other investigations under way upon which final reports have not been made, represent an accomplishment of the first magnitude in the direction of improved transportation service.

Moreover, Mr. Eastman does not have this great output to his credit as the result of a retreat from the world. He remains, as always, one of the most accessible officials in Washington, and his time has been made available to all and sundry, including many who probably have not deserved it. And on top of all this, the Co-ordinator has found time to make more public addresses than he ever made before. All in all, his accomplishment in the past year is a record of diligence, intelligence and effectiveness of which few persons anywhere can show the equal.

But rare is the noble nature which is entirely free from some persistent evil. Mr. Eastman is not an exception and, exercise his intellect as he will upon facts and logical deductions from them, he has been unable to liberate himself from an irrational obsession for government ownership of the railways. Even his manner of bringing this proposal to the attention of his audiences differs from his presentation of conclusions which he has reached normally as the result of a logical train of thought. With these latter he usually presents rather complete arguments—which are frequently so forceful that the hearer follows them inevitably to his conclusion. Not so, however, with his approach to a declaration of his advocacy of government ownership. Here it is his custom to limit himself to a statement of

his position, with one or two fragmentary supporting arguments or a jibe or two at those who oppose his view. Having followed him by logic to other conclusions, we are left to take this one from him on faith alone.

How specious and piecemeal is the support which he can muster for this inexplicable obsession is exemplified by his address before the savings bank convention in New York on May 16. He attacked a proposed declaration by Congress in favor of private ownership for the protection of security holders as "fatuous, if not disingenuous" and hinted that the government in taking over private property usually pays more than it is worth. This argument leaves out of all account the fact that the earnings of the railways, and hence the value of their securities, are very largely determined by the policies of the government toward them and their competitors. It would be small compensation to security holders, even if the government should pay them somewhat more than the market price of their holdings, if that price had been depressed to abysmal levels, as it has been, largely by government discrimination against the railways and in favor of competing agencies of transport—discrimination which Mr. Eastman himself has recognized.

As a matter of fact, the hint that railway security owners might get more than their holdings were actually worth if the railways were acquired by the government is an outright appeal to cupidity and one in which, we believe, most security owners will be wise enough to detect the guile. Security owners are entitled to a valuation of, and a return upon, their investment proportionate to the earning ability of their properties under fair and equitable treatment by the government. They are not entitled to a bonus at the expense of the taxpayers, which is what they would get if the government paid them more than the market value of their holdings—and such a bonus would but partially compensate for the decline in market values which unjust discrimination against the railways has occasioned. Give the security owners justice under private ownership and no bribe at the taxpayers' expense would tempt them to favor government ownership.

One cannot expect perfection—even from Mr. Eastman. All the same, it is not a little disconcerting that the great warrior should be impelled so frequently at the height of the parade to descend from his charger and mount the hobby-horse of his salad days.

Do Present Conditions Favor Consolidation?

Why should not stockholders of existing roads, most of them facing a long future without dividends, be asked to consider terms for the exchange of their holdings for the shares of greater systems, the formation of which would almost certainly bring dividends nearer? The idea that rail consolidation means feverishly rising prices for equity securities and can only follow an accomplished "preliminary ascendancy" in the stock control of a property to be annexed to another should be as dead as the rest of the New Era. That was always the way to strip consolida-

tions of the benefits they might otherwise bestow upon both owners and users of railroads.

Railroad executives and directors are with good reason seriously concerned over the protection of the investments of which they are the trustees. They ought to consider whether the present comparatively low level of stock prices does not favor consolidations by exchanges of equity securities on terms worked out by representative committees, but devoid of inside buying, expensive contests for control, new debts and market fireworks.

From the Wall Street Journal.

Economic Life of Steam Locomotives and Cost of Repairs

Co-ordinator Eastman submits report based on data from questionnaire CP-3 showing how repair costs increase with locomotive age

IN submitting a report on locomotive repair costs and their relationship to the age and size of steam locomotives Co-ordinator Eastman called attention to the magnitude of the amount involved and the importance of developing facts upon which correct assumptions may be based and efficient practices applied. Extracts from the report follow:

As a result of a long period of light traffic and the necessity for the curtailment of expenditures the railroads have properly deferred the maintenance of a considerable proportion of their motive power. With 21.2 per cent of the locomotives in unserviceable condition and with serviceable power lacking approximately one-third of a normal potential mileage there has probably never been a more opportune time to make a scientific study of steam locomotives for the purpose of formulating programs for repairs, retirement, and replacement which will best promote operating efficiency and economy.

This study had for its purpose the assembling of data which would be useful in ascertaining the extent to which repair costs are related to the age of locomotives, and, if possible, the development of a formula by means of which the economic life may be determined.

On October 1, 1933, Class I railways owned 51,425 steam locomotives; their ledger value averaged \$33,402 with an aggregate investment of \$1,717,697,850. This amount also represents approximately that expended in five years for repairs. As the average age of locomotives today is slightly more than 20 years, repairs made to existing locomotives have already amounted to about four times their original cost.

The cost of repairs made during the years 1927, 1928 and 1929 was used as a basis for the study. It is believed that during that period the current upkeep was more nearly in line with the mileage run out than has obtained during subsequent years; also, that as there were no substantial changes of prices and wages, the years selected afford a good basis for comparisons.

A summarization of the replies to questionnaire CP-3 includes an ownership of more than 59,000 locomotives averaging about 1,819 hp. They made 4,912,600,000 miles, 975,223,000 "horsepower-units", at a cost for repairs of \$1,190,669,000.

A partial summary covering 13,934 locomotives owned and 13,617 locomotives used gave an average age of 17.34 years for those owned and 13.13 years for those used. The "age-of-use" was obtained by multiplying the age of each locomotive by its annual mileage and dividing this aggregate total by the total mileage made by all the locomotives. The average repair cost of the group was \$1.41 per horsepower-unit and 29.7 cents per locomotive-mile.

We now have three years' detailed data on locomotive repairs aggregating \$709,346,536. This amount was expended on about 39,000 units, representing 116,079 locomotive-years and averaging 1,746 hp. During this period there were 3,200,994,548 locomotive-miles made by locomotives capable of producing 618,608,225 horsepower-units. These reports cover 65.4 per cent of the

reportable number of locomotives. Upon these data the "cost of repair by age-of-use" trend lines were produced.

Table I shows by horsepower groups the relationship between the number of units and the aggregate horsepower; for example, 13.7 per cent of the units are from 501 to 1,000 hp., but they represent only 6.8 per cent of the total horsepower.

Table I—Percentage Distribution of Locomotives Owned in Groups of 500 Hp. by Units and by Horsepower

Hp. groups	Per cent, units	Per cent, hp.
0-500	.1	..
501-1,000	13.7	6.8
1,001-1,500	29.5	21.1
1,501-2,000	27.1	27.1
2,001-2,500	13.8	17.9
2,501-3,000	8.8	13.3
3,001-3,500	4.8	8.9
3,501 and over	2.2	4.9
	100.0	100.0

Potential Horsepower Units

The basis heretofore most generally used for comparing costs of locomotive repairs is the "locomotive-mile." Manifestly the use of "per mile" for comparing the cost of repairs to a modern locomotive vs. one built 40 years ago can not lead to a high degree of refinement in cost studies.

The "tractive-force-mile" is a compound unit produced by multiplying locomotive mileage by the tractive force in pounds and is a more refined basis than the locomotive-mile. In general, however, the tractive force of a locomotive decreases as speed increases, but the amount of this decrease is dependent upon the boiler horsepower capacity.

The potential horsepower-unit as here used is also a compound unit, produced by multiplying the locomotive mileage by the potential capacity of the boiler to produce horsepower. To reduce the product to a number of a more practical size, it is divided by 10,000.

The proposed unit by no means indicates the horsepower produced, but it does indicate what the boiler capacity may produce at higher speed, if utilized. It is, therefore, believed that the horsepower-unit provides the most desirable and reliable generally available basis for comparing costs of locomotive repairs yet proposed. Now that the carriers have developed the horsepower of their locomotives on a uniform basis in order to reply to the questionnaire, it should be relatively easy to develop data on locomotives purchased subsequent to 1929 and to produce the horsepower-units currently. It is recommended that this be done and that the data be made available.

Locomotive Repair-Cost Trend Lines

In order to iron out yearly fluctuations and produce a more even spread the average costs of locomotive repairs per horsepower-unit, upon which the trend lines are constructed, are based on five-year moving totals. These moving totals are arrived at by adding to the figures for each successive year, the corresponding figures for its two preceding and two succeeding years. The

average secured from these five-year totals is applied to the specific year.

From the five-year moving totals we have produced a straight-line trend, or annual increment cost-line, based upon the mathematical principle of least squares. In this it is believed that we are on sound ground in

Table II—Number of Locomotives of Various Ages Used for Chart 3

Age of use	Locomotive type			Age of use	Locomotive type		
	0-6-0	2-8-0	4-6-2		0-6-0	2-8-0	4-6-2
1	103	43	164	21	951	1,939	339
2	92	62	197	22	1,172	2,452	606
3	70	67	226	23	1,052	2,131	515
4	92	130	339	24	983	2,346	389
5	110	135	345	25	778	1,860	225
6	157	196	343	26	829	1,752	152
7	184	156	249	27	593	1,268	29
8	255	161	279	28	380	972	3
9	304	137	311	29	239	594	..
10	381	104	281	30	269	401	..
11	370	114	243	31	112	276	..
12	286	82	226	32	48	127	..
13	287	136	310	33	36	73	..
14	443	328	487	34	66	66	..
15	599	556	801	35	68	139	..
16	626	779	914	36	59	143	..
17	763	1,198	1,066	37	42	132	..
18	571	1,283	947	38	75	108	..
19	466	1,084	664	39	22	133	..
20	698	1,691	485	40	22	92	..
				41	20	85	..

developing the yearly increment in cost of locomotive repairs per unit of service to correspond with the increase in the age of locomotives making the mileage.

With a view to testing the effect age has upon the horsepower-unit cost of locomotive repairs we have produced a large number of trend lines under various groupings; that is, by districts, by types of locomotives, and by size, in terms of 500-hp. units. The evidence points to the conclusion that the cost per horsepower unit increases as the age of the locomotives producing the service increases. It is also evident that this result follows regardless of the relative unit costs as between districts or railroads. The trend-lines were produced from mass data and do not necessarily denote what may be expected to occur on any particular road, but they indicate the combined effect.

A more reliable measuring stick for a particular

road would be a comparison by divisions or sub-divisions of the cost of locomotive repairs per potential horsepower-units coupled with the gross ton-mile performance.

Chart 3 shows in a heavy line the repair cost trend line at age-of-use for some 40,000 locomotives of all types and in lighter lines the trends for the three largest groups of locomotives reported; namely, 0-6-0 switch locomotives, 2-8-0 freight locomotives and 4-6-2 passenger locomotives. Combined, these groups comprise 44.4 per cent of the total units reported, 37.7 per cent of the horsepower units and 40.0 per cent of the total spent for repairs. A distribution of these three types by ages is given in Table II.

[Some of the charts accompanying the report are omitted. Chart 1 is similar to Chart 3, but with trend lines plotted separately for Eastern, Southern and Western Districts. Chart 2 gives trend lines for locomotives of 1,001 to 1,500 hp. and for those of 1,501 to 2,000 hp., plotted separately. Chart 4 shows a curve for economic life plotted against average annual locomotive mileage on the basis of an investment of \$30 per horsepower.—EDITOR.]

Chart 5 shows the economic locomotive life curve for investments ranging from \$20 to \$36 per horsepower and making from 20,000 to 100,000 miles per year. For example, from the chart it appears that if a locomotive costs \$31 per horsepower and makes 50,000 miles per year, its economic life is 20 years.

There are many factors which, if available, would add to the refinement with which comparisons of repair costs could be made. Average miles between general repairs is one, and in this connection attention is called to the relationship existing between the three districts as of October 1, 1933, as shown in Table III.

Whatever bearing this performance may have had upon costs of repairs, the data show that costs were substantially less where the mileage between general repairs was the greatest.

In using the charts for comparative purposes it should be kept in mind that a number of the large roads in the Eastern District did not report in sufficient detail to enable us to combine their data. In fact, the units reported upon include less than one-third of the Eastern

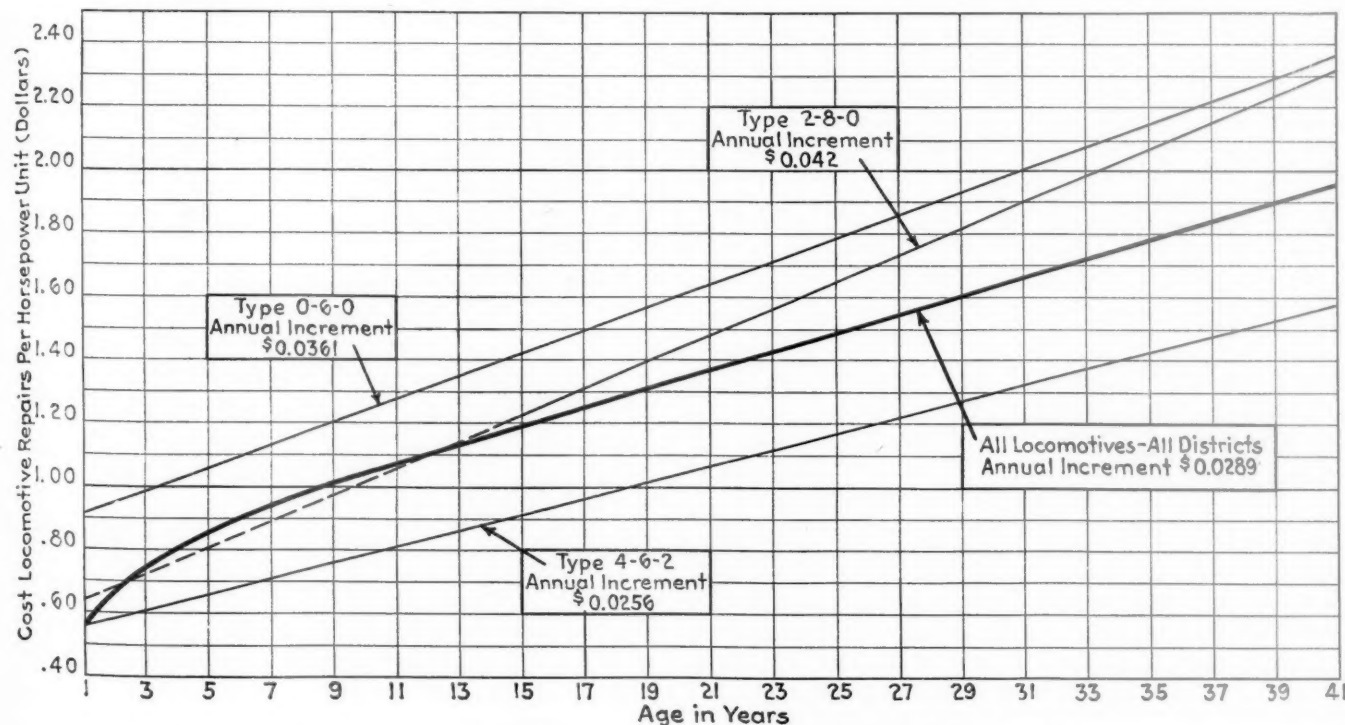


Chart 3—Repair Cost Trend Lines at Age-of-Use for All Types, Also for 0-6-0, 2-8-0 and 4-6-2 Types

District's grand total, while the Southern includes 84.7 per cent and the Western 94.6 per cent.

It is a fallacy to use the average age of locomotives owned in drawing conclusions as to what a road's retirement program should be. A more important factor is the age of locomotives used. However, there are other elements needing consideration.

The cost of repairs per horsepower-unit for the same age-of-use is slightly less than one dollar for the Western District; for the Southern District it is 10.4 per cent more, and 46.4 per cent higher for the Eastern District. From figures previously shown, it will be found that using

Table III—Mileage Between Repairs

District	Miles between general repairs	Eastern District index base
Eastern	68,158	100
Southern	86,835	100.0
Western	105,423	127.4

the Western District miles between general repairs as a base the Southern District was 17.7 per cent less, and the Eastern District was 35.4 per cent less. There is good reason to anticipate a reduced cost of repairs as the miles between general repairs are lengthened.

The difference between the actual cost on the Western district and what it would have been had the age-of-use been reduced to that of the Southern District was 6.03 cents per horsepower unit. As there were 375,243,635 horsepower units made by Western District roads reporting, this would indicate a difference in cost of repairs to them of \$22,627,191 for the three years, or a little over \$7,500,000 per year. Similarly computed, the savings to the roads reporting 32.1 per cent of the Eastern District locomotives would have been 2.35 cents per unit on 125,761,104 horsepower units, or \$2,955,385—nearly one million dollars per year. The estimates here shown are equivalent to 5.72 per cent of the total money expended on the Western District, and to 1.59 per cent of the amount spent by the Eastern District roads reporting.

From the data now made available it appears conclusive that the age-of-use has a most important bearing upon the cost of repairs and upon the economic life of locomotives.

On October 1, 1933, only 33.7 per cent of the potential mileage between general repairs remained in the locomotives of the country. With the abnormal decrease in traffic since 1929 it is reasonable to assume that aside from the deferred maintenance indicated a portion of the decreased cost of repairs has been brought about through a lowering in the age-of-use. This could be accomplished by running the mileage out of the more modern power and deferring repairs to older equipment. Such a practice is undoubtedly an economical one to follow and to the extent that it has been done it represents a splendid opportunity for the elimination of locomotives which, through a change in traffic and operating conditions, have become obsolete, or through studies which we have suggested may prove to have reached the end of their economic life.

Economic Life of Steam Locomotives

We are not championing the theory that the economic life of existing locomotives should be relied upon as the sole justification or need for the replacement of power on any given railroad. The economic life to which we here refer has to do with determining, as nearly as may be practical from available data, when the mounting cost of locomotive repairs, as affected by the combination of age and use, exceeds what the records show to

be the amount where continued use becomes an unwarranted drain upon operating expenses. There are many other and important factors which need careful consideration. Some of them are:

(a) Adequacy of present ownership of locomotives to protect peak demands with units of a type and age which justify repairs and which are capable of producing not only high ton-miles per hour of service, but of remaining in service the maximum number of hours per day during a 60-day period of maximum demand.

(b) As the size and investment in locomotives increase the importance of intensive utilization becomes paramount. The study shows that the more quickly the economic life is run out, through obtaining say 90,000 to 100,000 or more miles per locomotive per year, the greater the net return upon the investment. It also clearly shows that the continued use of locomotives beyond their economic life is a heavy and unwarranted drain upon operating expenses.

(c) As the large units cannot ordinarily be used to displace branch-line power, the only justification for their retention beyond their economic life is their value as a reserve to protect peak demands. Under some

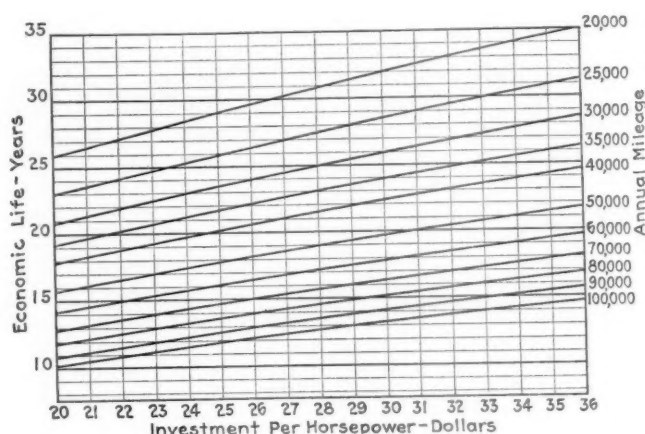


Chart 5—Economic Life Curves for Various Investments and Annual Mileages

conditions the increased cost for repairs may be justified, provided the mileage of such power is run out only during the period of peak demand. The question is one of protecting the peak demand with a reserve made up of locomotives too expensive to keep in repair for regular use, compared with a two-months' use and a twelve-months' carrying charge on a new locomotive.

(d) Fuel economy, and the wages of train and engine crews, are most important factors. In comparing a modern locomotive vs. one using saturated steam, this item in some cases may be more important than repairs at age-of-use.

(e) Age alone is not the criterion, but age combined with use is a more nearly controlling factor. There are many situations where it is necessary to protect a given service, but in so doing the limit of miles per locomotive year is from 10,000 to 20,000 miles, in which event it is possible that the economic life of such a locomotive might well be 40 years or more. Each case has to be specially considered to determine the correct answer.

Data are now available to indicate the extent to which age-of-use affects the costs of locomotive repairs. The trend is upward as the age increases. The cost of amortizing the investment in any given locomotive can be precisely determined for any assumed economic life. This fact, in connection with the definite rise in the cost of repairs, allows of a mathematical determination of the economic life of a locomotive.

Sheer Booms Embody Unique Features

Protection structures of novel design for two railway bridges where rock bottom precluded use of piling

THE extensive expenditures imposed on the railways for the adaptation of their bridges to meet the requirements of water transport in connection with the canalization of the Illinois river included provision for sheer booms to aid navigation and to protect the piers of the channel spans. In locations where the nature of the bottom permitted, these were constructed of piles with timber wales, but at two of the bridges bare, or nearly bare, rock bottom precluded the use of piles and led to the construction of floating booms and filled cribs. Because these protecting structures at the two bridges differ radically in design, opportunity is afforded for an interesting comparison of two engineering works designed to serve the same purpose, but which vary widely in both general conception and detail. One of these installations was provided for the bridge of the Chicago, Rock Island & Pacific at Seneca, Ill., and the other for the Chicago, Burlington & Quincy bridge at Ottawa.

In general plan, the protection provided at these two bridges is almost identical, consisting of flared wings extending roughly 200 ft. upstream and 100 ft. downstream from the center line of the bridge pier on each side of the channel. In each case, also, there are two floating booms on the upstream side and one floating boom on the downstream side (on each side of the channel). The downstream boom is supported between the bridge pier and a downstream crib, while the upstream booms are afforded support by the bridge pier, an upstream or nose crib, and an intermediate crib. In both cases, also, the bearing of the floating booms against either the bridge piers or the cribs is constructed in such



View of Two Upstream Cribs and Floating Booms at the Burlington Bridge at Ottawa, as Seen from the Channel Side

a manner that the booms are free to move up or down relative to the fixed structure with changes in the water level. The cribs, however, differ radically in design. Those provided for the Burlington bridge are of the open-timber, rock-filled type, while those for the Rock Island crossing consist of steel sheet-pile boxes filled with gravel, and provided with a concrete cap.

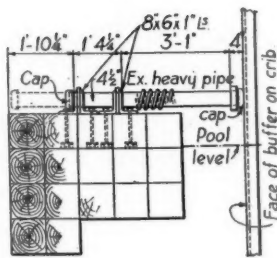
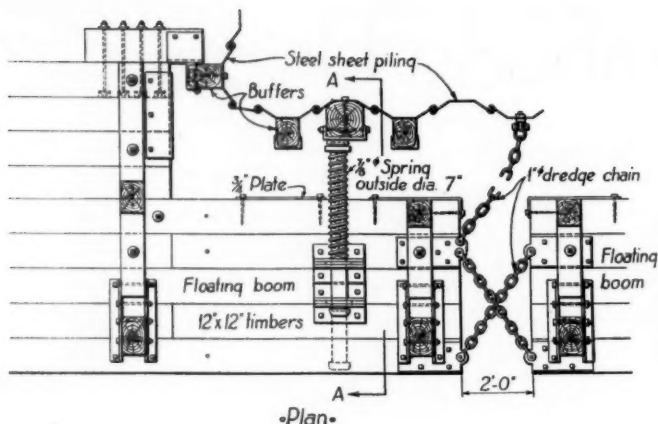
The Timber Cribs

The timber cribs were constructed of 8-in. by 16-in. sticks laid flat in alternate transverse and longitudinal courses, creosoted Douglas fir being used to a depth of six courses below normal pool level, and untreated fir for the remaining depth to the bottom. The cribs are from 20-ft. by 20-ft., to 20-ft. by 30-ft. in plan, with plain rectangular outlines from the bottom to a depth of 22 ft. from the top, above which elevation their outlines were modified, as found necessary, to provide nosings or to introduce recesses to house the booms. To permit the cribs to be loaded for sinking, after having been floated into position, they were provided with solid floors, consisting of two courses of 8-in. by 16-in. timbers laid flat at right angles to each other.

The rock surface, under a cover of 0.3 to 5.6 ft. of mud, is nearly level, but the local differences in elevation (of a few inches) encountered within the base area of the cribs were sufficient to distort the cribs or throw them out of plumb if no means were provided for leveling them up. Accordingly, an 8-in. by 8-in. hole was provided in the double floor at three places, through which 8-in. by 8-in. timbers could be introduced to serve as spuds, thus forming a three-point support for the crib on which it could be leveled up as it landed on the rock bottom. In addition, 4-in. holes were drilled in the floor at 10 uniformly distributed locations, and a 4-in. pipe flange was secured to the floor over each of these holes with $\frac{3}{8}$ -in. by 5-in. lag screws. These flanges



Two of the Upstream Cribs at the Rock Island Bridge at Seneca, Showing a Rear View of One of the Floating Booms



Detail Sketch of the Connection of the Two Upstream Booms of the Rock Island Bridge, Showing the Spring Buffer and Arrangement of Connecting Chains

served as the means by which 4-in. pipes were attached for use in forcing Portland cement grout into the space between the top of the rock and the bottom of the crib while it was being supported in a plumb position by the spuds. The pipes were later unscrewed from the flanges and reused. Following this, the cribs were filled with rock to the top, and rip rap was placed entirely around the sides of the cribs to a maximum height of 11 ft. below normal pool level. The noses of the upstream cribs were sheathed with protection plates 3/8 in. thick.

The Sheet Pile Cribs

Although the depth to rock and the thickness of the mud cover were substantially the same as at the Burlington bridge, the cribs constructed for the Rock Island bridge are of a radically different design, consisting of cribs constructed of inland steel sheet piling. The adoption of this design was influenced in part by the fact that a considerable part of the sheet piling required was available because it had been employed in coffer dams around the lift span piers while they were being strengthened and repaired.

The sheet piles were driven to rock, a frame of timber wales was installed on the inside at pool level, and just above the wales the sides of the crib were tied together by a grid of one-inch round rods, spaced about three feet center to center in both directions. These rods passed through holes in the sheet piles on opposite sides of the crib and were held in place by nuts and washers applied on each end. The cribs were then filled with gravel to within four feet of the top, and for the remainder of the height with concrete, which was carried about 18 in. above the top of the sheet piles to provide a coping.

The intermediate cribs are about 16 ft. square, while the nose cribs have a cut-water shape at the upstream end, and both the nose cribs and the downstream cribs are recessed at one corner to receive the ends of the floating booms. Similar recesses for the booms were provided in the ends of the two bridge piers—on the downstream end by means of a short sheet pile crib and at the upstream end by means of a masonry wing wall.

The Floating Booms

In so far as it concerns their general design, the floating booms for the Rock Island and Burlington bridges are very much alike, but they differ as to many important details. Briefly, the booms comprise rafts of 12-in. by 12-in. timbers, surmounted by a heavy fence, braced to resist lateral thrusts and provided with three or four lines of wales to receive the impact of floating equipment. The essential differences in the structural elements of

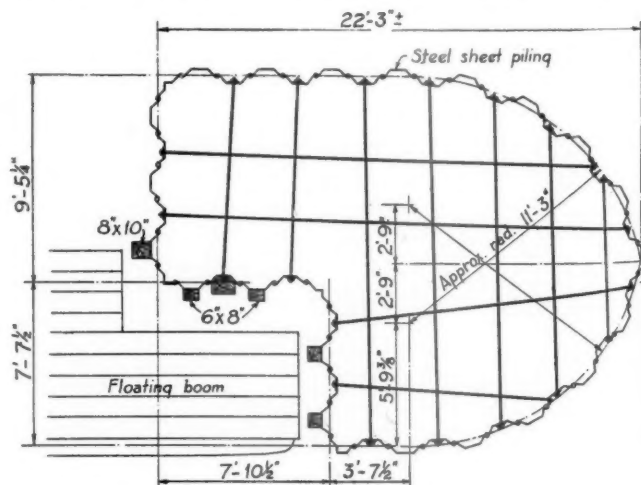
the two designs are brought out in the cross-sectional sketches. The booms are all constructed of untreated cedar below the water level, while above the water line the timbers in the Rock Island booms are of untreated Douglas fir and those in the Burlington booms are of creosoted preframed Douglas fir.

In both designs, provision is made for sliding metal contacts between the booms and the cribs, consisting in the main of steel chafing plates attached to the rear faces of the booms at the points where they bear against steel channels that serve as the anti-chafing faces of timbers attached to the cribs in a vertical position.

In the Burlington design, this arrangement is supplemented at the downstream end of each boom, where the force of the current keeps it in constant bearing against the crib, with a wheel or roller with a diameter of 18-in. and a 4-in. face that turns in bearing boxes bolted to the boom and rolls up and down a plate attached to the crib. In these booms, also, the alinement of the upstream booms relative to each other is insured by a tongue-and-groove joint which is formed by projecting one of the longitudinal 12-in. by 12-in. timbers beyond the end of one of the booms so that it mates with two timbers projecting from the end of the other boom. This arrangement insures lateral alinement, but does not prevent longitudinal movement of the booms relative to each other. In the Rock Island booms, the same effect is accomplished by means of crossed chains; a one-inch dredge chain connects the rear of one boom with the front of the other, and vice versa.

Shock Absorbers

A distinctive feature of the Rock Island booms is the use of shock absorbers between the booms and the cribs.



Plan of West Upstream Crib for the Rock Island Bridge at Seneca



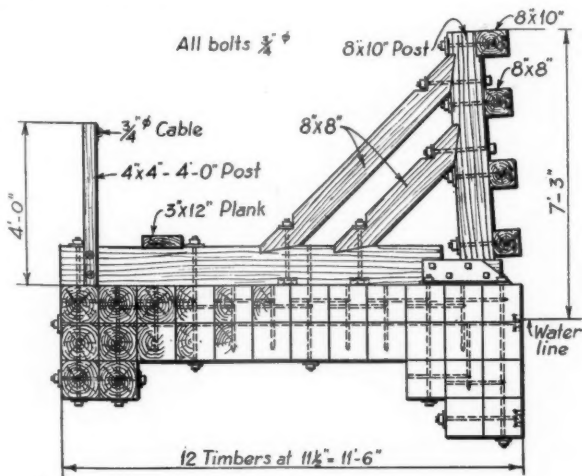
Rear View of the Floating Booms and Cribs at Ottawa

Each of these consists of a $\frac{7}{8}$ -in. coil spring with an outside diameter of 7-in. and an uncompressed length of 3-ft., which is placed over a 4-ft. 6-in. length of $4\frac{1}{2}$ -in. extra-heavy pipe capped on each end. The pipe is supported in two guides, each consisting of two 6-in. by 8-in. by 1-in. angles and a 1-in. plate, bored to receive the pipe and bolted securely to the top of the booms in such a position that the cap on one end of the pipe bears against a steel-covered buffer timber bolted vertically against the crib. Thus, as the boom is pushed against the crib, compression of the spring absorbs a part of the energy of the impact.

Another feature of the Rock Island booms is the application of tapered fender timbers along the outside faces at the ends next to the bridge piers and next to the end cribs.

The effect of these is to deflect a boat or barge away from the pier or crib after it has come in contact with the floating boom.

These sheer booms were designed and constructed under the direction, respectively, of I. L. Simmons, bridge engineer of the Chicago, Rock Island & Pacific, and G. A. Haggander, bridge engineer, Chicago, Burlington & Quincy.



Typical Cross Section of the Floating Booms of the Burlington Bridge at Ottawa

Plan for Simplification of Interline Freight Accounting

WASHINGTON, D. C.

ANNOUNCING on June 11 the plan agreed upon by the railroads for the simplification of interline freight accounting as to divisions of joint rates, which was briefly described in the *Railway Age* of June 2, Co-ordinator Eastman said "the railroads and their traffic executives and accounting officers are to be congratulated upon this achievement" and quoted a report from Director Wylie of the Bureau of Accounts of the Interstate Commerce Commission characterizing the plan as "one of the most progressive steps taken in railway accounting since the Hepburn amendment."

On April 4 the co-ordinator addressed a communication to the Regional Co-ordinating Committees calling attention to the excessive complexity and even uncertainty of the arrangements between the carriers for the division of joint rates, and to the unnecessary expense in the settlement of interline accounts thus imposed upon them. He stated that he believed "the matter to be one of great importance to the railroads, from the standpoint of economy and efficiency, and that it should be handled by a central committee of the carriers which can study it thoroughly and act aggressively with a view to early and definite correction."

Prior to the receipt of this communication, he said in announcing the plan, it appears that the Advisory Committee of the Association of Railway Executives had appointed a committee of 21 traffic executives and accounting officers to study this question, among others, and the co-ordinating committees jointly agreed to ask this committee for a report on the subject of simplified divisions. The committee made such a report to the chairman of the Association of Railway Executives, which contained definite recommendations for the simplification of divisions and related matters over a trial period. The Advisory Committee of the association approved this report, and submitted it to the member roads for approval. It has since been approved by the Class I roads and also by the American Short Line Railroad Association, and instructions have been given to make recommendations effective. The director of accounts of the Interstate Commerce Commission, Mr. Wylie, reports:

"In my judgment the adoption by carriers of this report marks one of the most progressive steps taken in railway accounting since the Hepburn amendment to the Interstate Commerce Act became effective. The benefits are far reaching and will be reflected in marked economy in interline freight accounting and the expedition of interline freight settlements. Greatly increased accuracy in interline accounting will result and disposition of freight claims will be facilitated.

"If the clearing house plan of settling interline freight balances is adopted, the simplification of interline divisions will be found to be a contributing factor in making prompt submission by carriers of their interline accounts and consequent early determination of balances."

The report of the joint committee, of which E. R. Woodson, secretary of the Railway Accounting Officers' Association, is chairman, follows:

REPORT OF THE JOINT COMMITTEE OF TRAFFIC AND ACCOUNTING OFFICERS. TOPIC No. 1.—SIMPLIFICATION OF DIVISIONS.

(a) Recommended that future divisions, and, where practicable, existing divisions, of all joint through freight rates be expressed in percentages (except as provided in (b)), and that

in no case shall percentage proportions have more than one figure at right of decimal point.

(b) That the utmost effort be made to convert into percentages all minimum, maximum, or fixed revenues expressed in terms of money per 100 lb. or other unit, but that pending such conversion they be deducted, as heretofore, before dividing the balance of revenue.

(c) That whatever the basis of the divisions may be, they be issued by the traffic department in the simplest practicable form.

TOPIC No. 2.—DETERMINE THE PRINCIPLE OF A BASIS FOR INTERIM DIVISIONS TO BE APPLIED PENDING FINAL DIVISION DETERMINATION.

Where joint through freight rates (for which divisions have been established) are or have been changed and new divisions not agreed upon, the line haul revenue will be divided on a revenue prorate, using the old line haul factors as a temporary basis, subject to Notes 1 and 2.

Where joint through rates are established as substitute for combination and no agreed divisions are in effect, the line haul revenue will be divided on a revenue prorate, using the former line haul earnings as factors for a temporary basis, subject to Notes 1 and 2.

Note 1.—Wherever the former bases provide for deductions of fixed arbitraries, including terminal, insurance or bridge deductions, those deductions must be made before prorating the balance of the revenue. This is not designed to cause any carrier to participate in the absorption of any of these deductions in which it has not heretofore participated.

Note 2.—Wherever the revised rates include special arbitraries allowed by the Interstate Commerce Commission for account of any carrier and such arbitraries are added to the standard line rates, such arbitraries must be deducted before prorating the balance of the revenue.

Wherever class rate divisions are in effect, the same bases of divisions will apply in connection with classification exceptions or rates made on fixed percentages of class rates.

Where inter-territorial traffic, on account of absence of through or incomplete routing in tariffs, is sent via junction points through which agreed or temporary divisions are not in effect, the rates shall first divide over the inter-territorial gateway on basis of agreed divisions to and from the gateway; the subdivision of the proportions in the separate territories shall be adjusted without effecting the revenue in the other territory.

Where joint through rates are in effect and tariff provides via any line, party to such through rates, that the lowest combination of intermediates via any route will be the maximum applicable via all routes, the through rate made upon such combinations will divide:

(a) When the traffic moves via the point upon which the combination rate makes, the combination rate will divide as made.

(b) When the traffic moves via other routes the combination rate will divide upon the same bases as used in dividing the joint through rates.

The adoption of the foregoing temporary bases as provided in Topic 2 is not intended to determine or set a precedent for permanent divisions.

TOPIC No. 3.—DETERMINE WHETHER ARBITRATION BOARD OR OTHER MACHINERY SHOULD BE SET UP TO SETTLE DIVISION DISPUTES.

Your committee is agreed on the principle of voluntary arbitration as between carriers or groups of carriers. However, in view of the progress that has been made through the recommendations herein submitted, towards simplifying temporary division bases for prorating or dividing rates on which divisions have not heretofore been in effect, your Committee concludes that the present time is inopportune for setting up arbitration boards or other machinery for the settlement of division disputes. Your committee recommends that a period of six months elapse, during which these recommended bases be made operative, with a view to determining results. At the end of the six months' period from May 1, 1934, the question of creating arbitration boards or the setting up of machinery to settle division disputes shall again be brought before your committee for the purpose, at that time, of preparing its recommendations on this question.

RETROACTIVE APPLICATIONS.

(a) Where rates have been published for which divisions have not been furnished, or, if furnished, have not been agreed to by all interested carriers, and where bases as outlined above are used as a temporary measure for dividing revenue between interested carriers, such temporary divisions will apply retroactively to all prior unsettled, admittedly disputed accounts on the traffic for which temporary divisions are provided when previously covered by Statements of Differences or letters of equivalent effect as provided in Railway Accounting Officers Association mandatory freight accounting Rules.

(b) If and when such temporary divisions are replaced by agreed upon permanent divisions, the latter will not be applied retroactively beyond the current month but will be made effective as of an agreed upon date not prior to the first of the same month in which agreed upon divisions are established.

The provisions of (a) and (b), above, will not apply to the divisions in I.C.C. Docket No. 17,000, Part 2, nor to cases that are now before the Interstate Commerce Commission on formal complaint.

SIMULTANEOUS PUBLICATION OF DIVISIONS AND RATES.

Your committee recommends that no further joint through rates be voluntarily established without agreement for divisions before publication of the rates.

Freight Car Loading

WASHINGTON, D. C.

REVENUE freight car loading in the week ended June 2, which included the Memorial Day holiday, totaled 578,541 cars, a decrease of 46,026 cars as compared with the week before but an increase of 65,567 cars as compared with the corresponding week of last year and of 131,129 cars as compared with 1932. Coke and ore showed increases as compared with the week before and miscellaneous freight, forest products, coal, coke, and live stock showed increases as compared with last year. The summary, as compiled by the Car Service Division of the American Railway Association, follows:

Revenue Freight Car Loading

Week Ended Saturday, June 2, 1934

Districts	1934	1933	1932
Eastern	129,535	114,078	99,555
Allegheny	115,305	94,714	85,488
Pocahontas	41,363	35,776	29,140
Southern	83,072	82,250	73,015
Northwestern	82,604	65,973	53,796
Central Western	81,177	74,155	67,082
Southwestern	45,485	46,028	39,342
Total Western Districts	209,266	186,111	160,214
Total All Roads	578,541	512,974	447,412
Commodities			
Grain and Grain Products	27,146	34,305	23,305
Live Stock	15,759	15,144	14,400
Coal	100,715	80,179	63,096
Coke	7,068	4,621	3,011
Forest Products	24,396	23,069	16,419
Ore	30,319	9,001	2,185
Mdse. L.C.L.	143,656	148,386	154,810
Miscellaneous	229,482	198,269	170,186
June 2	578,541	512,974	447,412
May 26	624,567	545,551	521,249
May 19	611,142	535,719	515,628
May 12	601,739	534,806	517,260
May 5	604,205	527,118	533,951

Cumulative Total, 22 Weeks..... 12,900,673 10,931,027 12,100,463

The freight car surplus for the period ended May 14 averaged 359,560 cars, a decrease of 8,804 cars as compared with the last half of April. The total included 208,304 box cars, 100,426 coal cars, 26,522 stock cars and 10,565 refrigerator cars.

Car Loading in Canada

Car loadings in Canada for the week ended June 2 totaled 44,614 cars, as compared with 38,886 cars last year and 42,614 cars in 1932, according to the compilation of the Dominion Bureau of Statistics.

	Total Cars Loaded	Total Cars Rec'd from Connections
Total for Canada:		
June 2, 1934.....	44,614	21,807
May 26, 1934.....	39,514	23,278
May 19, 1934.....	44,670	23,712
June 3, 1933.....	38,886	17,126
Cumulative Totals for Canada:		
June 2, 1934.....	915,957	516,131
June 3, 1933.....	744,169	381,484
June 4, 1932.....	912,850	460,432

ced by
applied
e effec-
e same

to the
es that
formal

ES.

through
visions

D. C.

ended
oliday,
ars as
of 65-
week of
1932.
th the
ducts,
pared
e Car
iation,

1932
99,555
85,488
29,140
73,015
53,796
67,082
39,342
160,214
447,412

23,305
14,400
63,096
3,011
16,419
2,185
154,810
170,186

447,412
521,249
515,628
517,260
533,951

100,463

May 14
s com-
cluded
k cars

une 2
rs last
mpila-

al Cars
d from
unctions

21,807
23,278
23,712
17,126

16,131
81,484
60,432

"Port of Entry" Law Successful

Kansas truck legislation brings revenue and insures
greater safety

THE state of Kansas, in common with other states, has been experiencing difficulties with highway truck operators in tax evasion, highway hazards and general unreliability. To meet the situation, a bill providing for more stringent truck regulation, drafted by Charles W. Steiger, attorney for the State Corporation Commission, was passed last November and made effective on January 1, 1934.

For many years the state of Kansas had in effect a statute which required commercial users of the Kansas highways to pay for such use in the form of a per-ton-mile measured tax based upon the weight and capacity of the vehicle and the number of miles traveled in the state. Although this tax was admittedly fair and not excessive, little success was experienced in its collection and it was soon evident that many resident and non-resident truck operators were using the Kansas highways extensively without paying due compensation.

Kansas has also had in effect for some time a tax on gasoline and, finding a great deal of difficulty in preventing bootlegging of this product, a few stations were set up for the purpose of collecting the gasoline tax and supervising the transportation of gasoline. It is upon this idea of supervising stations that the present law was built, although since January 1, the number of stations has been largely increased and the scope of the stations broadened.

The bill provided for the establishment of "ports of entry" to the number of 65 on highways entering Kansas, where a checker is stationed to supervise the operation of trucks into the state. As a result of the safety inspection on all trucks, not only have accidents been very largely reduced, but because of the supervision there has been no instance in Kansas this year, according to Mr. Steiger, of persons sustaining damage or injury and not being able to settle or adjust their damages satisfactorily and promptly. Prior to the enactment of the new law, it was almost a daily occurrence for the State Corporation Commission to receive inquiries concerning an accident and to find that the owner of the motor truck had no insurance with the commission and was not subject to the jurisdiction of the commission, therefore, escaping liability and immediately moving out of the state with no record as to who he was, where he was going, or any other information that would enable him to be traced. One of the principal results of the new law, in the opinion of the State Corporation Commission, is that such conditions no longer exist.

Excellent Financial Results

The financial results, as issued by the State Corporation Commission, indicate clearly the extent to which tax evasion was practiced prior to the passage of the law and its rigorous enforcement. During the first three months of this year, trucks were checked in to the number of 117,613 trips across the state line. These included 47,412 Kansas trucks and 69,901 trucks registered under other state licenses. The aggregate collections during this period amounted to \$112,406, as compared with \$45,363 for the same period last year. Figures for the month of April just released show col-

lections of \$11,256. The amount of taxes collected through the office of the commission from registered carriers amounted to \$21,600, making a total of taxes paid by freight motor carriers of \$32,856. In April, 1933, under the old law, the total collection was \$12,500.

Also, applications for permits to operate trucks increased from 288 in the first quarter of 1933 to 468 in the first quarter of 1934. These figures indicate clearly that, although the original purpose of the act was to collect the tax which the foreign truck operators were evading, the actual result of the enforcement is to uncover a substantial amount of tax evasion by Kansas truck owners.

The 65 stations already established are situated near the state line on every main traveled highway entering Kansas. At the 10 important locations, where most of the truck traffic enters the state, checking service is provided day and night and the men in charge are paid from \$100 to \$125 a month. At other points, where the volume of traffic is not so great, a number of different arrangements for the personnel have been adopted. The services of filling station operators, store proprietors and others have been employed, many of whom work on the basis of 10 cents per truck checked, others on the basis of a limited sum per month, as the duties required of many of them are light and the availability of the checker at the state line is the principal consideration.

The truck operators who are registered with and under the jurisdiction of the State Corporation Commission of Kansas are not required to pay the tax at the port of entry. They continue to pay their tax monthly as they have always done. The only persons required to pay the mileage tax at the ports of entry are those who do not desire to come under the jurisdiction of the commission, and they pay the tax for each trip they make in Kansas. When a non-resident commercial trucker not under the jurisdiction of the commission approaches one of the stations, he fills out a manifest declaring the weight of his equipment and cargo, and the point of destination in Kansas. His tax is then computed readily and he pays the amount of such tax in advance. If he cares to do so, he may file an application, make a deposit and file insurance. After this procedure, he may pay his mileage tax monthly and is permitted to operate on exactly the same basis as the owners of trucks resident in Kansas.

Very desirable results have also been obtained in the matter of safety of highway travel. Surveys indicate that a large proportion of the accidents and injuries in truck operation are caused by the operation of improperly equipped vehicles. Whenever a truck reaches one of the ports of entry under the present law, it is checked for brakes, lights and road worthiness, and no truck enters the state of Kansas today unless it is properly insured. An unlooked for result in the actual working out of the supervision under the new law has been that in a number of cases stolen freight and stolen vehicles have been detected and recovered at the ports of entry.

In summing up the results of four months' operation

under the new law, Attorney Steiger states: "We who have to do with the regulation of trucks in Kansas believe that in our new port of entry law we have a simple and practical solution of many of our problems. Kansas, like other states, has spent enormous sums in the improvement of its highway system, and proceeds upon the theory that those who make use of our highway facilities for commercial purposes should make a contribution to the state for such use in some fair proportion to the benefits they gain therefrom. Our port of entry law is not intended for and does not work as an obstruction to interstate commerce. In fact, its operations promote the free flow of interstate commerce by affording some reasonable protection to our highway system, increasing the safety of those using the highways, providing efficiency in collecting the taxes to construct and maintain the highways and requiring all using the highways to pay the taxes levied. We concede that this plan is an experiment, but we are already satisfied that it is a healthy and successful one. The entire activity described was carried on at an expense to the Corporation Commission of approximately \$3,500."

Bill To Amend Labor Act Reported

WASHINGTON, D. C.

THE bill to amend the railway labor act of 1926 and create a national board of adjustment, which has been advocated by Co-ordinator Eastman, but with several amendments opposed by Mr. Eastman which have been urged by the railway labor organizations, was favorably reported by the House committee on interstate and foreign commerce on June 11 and strenuous efforts were being made to bring the bill to a vote before Congress adjourned. The bill as reported was a new bill, H.R. 9861, including some revision made by a sub-committee last week, including a definition of "company unions" and a section prohibiting railroads from requiring persons seeking employment to promise to join or not to join a company union, in place of language recommended by Mr. Eastman and adopted by the Senate committee which had made the prohibition apply to joining or not joining a "labor organization." At the same time, however, the committee inserted in its report a statement that "while providing that labor unions shall be free from employer influence and control, it does not give preference to any particular union or class of unions."

Representative Merritt, of Connecticut, filed a minority report.

Co-ordinator Eastman on June 7 had addressed a letter to Chairman Rayburn of the House committee commenting on the amendments to the bill proposed by the Railway Labor Executives' Association and supported in a brief filed by J. A. Farquharson, vice-president of the Brotherhood of Railroad Trainmen, expressing the hope that the committee would not imperil the legislation by adopting them and saying that "they can cause only trouble and are incapable of any sound defense." He said he was confident that the only real support for the proposed amendments was from a single organization and that none of the other standard organizations has anything to gain from such changes in the bill. He said in part:

Paragraphs 4 and 5 of Section 2 of H. R. 9689 merely write into the permanent law and clarify provisions of the Bankruptcy

Act and Emergency Railroad Transportation Act, 1933. The proposed amendments which Mr. Farquharson undertakes to defend are designed to protect certain so-called "percentage contracts" which his brotherhood has with some of the railroads. These contracts are so out of harmony with the whole spirit of railroad labor relations as contemplated by the Railway Labor Act, the Bankruptcy Act, and the Emergency Railroad Transportation Act, that I am frankly astonished by the persistence with which these amendments are urged. In my testimony before your committee I pointed out that they are designed to permit the so-called "standard organizations" to enter into contracts or agreements with the carriers which are prohibited in the case of "company unions", such contracts or agreements being of the "closed shop" or "yellow dog" variety. No such distinction is made in the present labor provisions of the Emergency Act, which the standard organizations themselves wrote, and I am at a loss to know how it can be defended. It is not necessary to repeat here all that I said in my statement to the committee. However, the trainmen have cleared up with my organization a few points as to which I was not fully informed at the time of my statement.

(1) None of the percentage contracts applies to the road train service. Conductors demoted to trainmen's work on account of decrease in business displace trainmen, and trainmen are promoted to conductor's jobs without any friction between the organizations and without any percentage contracts. Under these circumstances a percentage contract for the trainmen in road service would be impossible.

(2) The percentage contracts apply only to yard service; i.e., yard conductors, yard brakemen and switchmen. The contracts provide that at least 75, 85 or 100 per cent, as the case may be, of these classes of employees working in a yard must belong to the Brotherhood of Railroad Trainmen and that, in one instance at least, the carrier must, in the contract of employment, provide that the new employee shall join the trainmen's organization within a limited number of days from his employment. Thus the contract provides for a closed shop, in whole or in part, and has also all the essential features of the "yellow dog" contract, denying freedom of choice to the employees.

(3) The Brotherhood of Railroad Trainmen have the contract for the yard service employees on between 140 and 150 Class I railroads, but on only 23 roads of this total has the brotherhood been able to negotiate a percentage contract. On the remaining 120 odd roads where the trainmen have the yard contract, they are in position to make the yard service jobs interchangeable with the road train service, protect their contracts, prevent illegal strikes, insure division seniority for yard service employees, and generally make the organization much more flexible in the protection of their members and the railroad than under a percentage contract. This is so because the percentage is figured for each yard separately, and hence the men have no seniority rights elsewhere in case the operation of a yard is abandoned through consolidation, lengthening of divisions, or other operating change.

(4) The Brotherhood of Railroad Trainmen could, without difficulty, rewrite the percentage contracts to conform with the yard contracts that they hold on the great majority of the roads.

(5) The percentage contracts of the Brotherhood of Railroad Trainmen cover not more than 10,000 employees. This is approximately 1 per cent of the total of railroad employees. The provisions of paragraphs 4 and 5 of section 2 of the bill will affect the opportunity of freedom of choice in the selection of representatives by perhaps 400,000 employees heretofore included in "company union" groups. Is it any wonder that the railroads foster the contentions made by the trainmen in the hope of preventing the passage of the bill or imperiling its constitutionality? The committee members will appreciate the legal arguments that will be raised in behalf of the "company unions" if Congress should prohibit certain practices with respect to them but permit the same practices with respect to other labor organizations.

Long experience has shown that whenever management is put into position to assist in the control of membership in a labor organization, it will find ways to control the policy and practices of that organization.

The importation of labor practices in other industry as a guide to Congress in framing railroad labor legislation presents an anomaly. Heretofore, the railroad labor leadership has set the model to which labor interests in other industry have sought to attain. Senator Wagner has joined with the committee on interstate commerce in the Senate in recommending this legislation as it appears in H. R. 9689. Mr. Farquharson's brief is in error in asserting that the United Mine Workers write only closed shop contracts. The fact is that while the check-off may be written into the miners' contracts, it applies only to the members of the union.

Revised Rail Pension Bill Reaches Debate Stage in Senate

It was, however, set aside for other subjects—Meanwhile similar measure is reported in House

WASHINGTON, D. C.

THE railroad pension bill advocated by the railroad labor organizations, requiring railroad employees to contribute 2 per cent of their monthly compensation (excluding that over \$400 a month) and the railroads double that amount to a pension fund to be administered by a Railroad Retirement Board, (until the board shall determine a different percentage) reached the stage of debate in the Senate on June 12, but was later set aside for other subjects. Meanwhile a similar bill revised somewhat to meet criticisms offered by co-ordinator Eastman at hearings on the bill, although not his fundamental objections to legislation on the subject at this time until his organization has completed its study of the subject, was favorably reported by the House committee on interstate and foreign commerce on Wednesday and it was planned to ask for a rule which would bring the bill to a vote in the House before the adjournment of Congress.

The revised bill, H.R. 9911, was introduced on June 11 by Representative Crosser, after the bill had been referred to a sub-committee following a hearing before the full committee on June 8 at which passage of the bill was strongly urged by representatives of the employees and vigorously opposed by Co-ordinator Eastman and representatives of the railroads. It was then taken up by the full committee on Tuesday but after a protracted session the question as to whether the bill should be favorably reported was postponed for another meeting on Wednesday. The principal change was in the provision stating the amount of the pension annuities to be paid, to meet objections by Mr. Eastman that the bill was actuarially unsound and provided for pension payments in the first year greatly exceeding the contributions to the pension fund to be made by the railroads and their employees under the terms of the bill and in some instances provided for pensions exceeding the earnings at the time of retirement. In place of the original provision for pension payments based on 2 per cent of the compensation for each year of service the revised bill proposed a sliding scale providing for 2½ per cent of the first \$50 of monthly compensation, 2 per cent of the second \$50, 1½ per cent of the third \$50, and 1 per cent of the compensation in excess of \$150. It also provided that the monthly compensation to be used in calculating the annuities shall be the average of the monthly compensation paid to the employee, except that for service before the effective date of the law the monthly compensation shall be the average of the monthly compensation for all payroll periods for which the employee has received compensation from any carrier out of eight consecutive calendar years ending December 31, 1931. The earlier bill had provided for the use of any twelve consecutive months selected by the employee. Changes also were made to meet criticisms made by Mr. Eastman in the definitions of "carrier" and "employee" in the bill, so that it would apply to carriers by railroad, express company, sleeping-car company, or other operator of transportation facilities or of any sub-

sidary or auxiliary services used by or operated in connection with any such carrier, subject to the railway labor act. The definition of employees was changed to cover those who have been in service within one year before the enactment of the law.

As finally reported by the committee on Wednesday, however, the bill was still further amended to reduce the percentage to 2 per cent on the first \$50, 1½ per cent on the second \$50 and 1 per cent on the additional compensation, with a limitation of all pension payments to a maximum of \$100 a month. An amendment was also proposed in the section relating to the assumption of obligations under the existing voluntary pension plans. The committee estimated that these changes would reduce the cost under the bill to \$60,400,000 for the first year, \$68,400,000 for the second year, \$76,800,000 for the third year and \$90,300,000 for the fourth year.

Eastman Urges Postponement Until Next Session

Postponement of pension legislation until the next session of Congress was urged by Mr. Eastman, in a statement before the House committee on June 8 on the bill as it had been reported by the Senate committee. Presenting estimates that the total of pension payments likely to be required in the first year would greatly exceed the amounts proposed to be contributed both by the railroads and by the employees under the terms of the bill, Mr. Eastman said that before the next session of Congress he would be able to present the results of the survey made by his Labor Relations Section, with the aid of an advisory committee, including actuarial analyses of the data, and a plan definitely adjusted to the facts so ascertained.

Mr. Eastman said also that he hoped and expected that it would be possible to include in this plan provision for unemployment benefits, placement service, and dismissal wages under certain conditions. He pointed out that no annuities would become payable under the bill prior to January 1, 1935, and that they may be held up longer by litigation which the bill would invite. "In the circumstances", he said, "I am of the opinion that it is desirable to suffer this comparatively short delay rather than to adopt a measure having the imperfections of the one before you. In the meantime, the present railroad pensions will continue in operation and will protect the situation to some extent."

Mr. Eastman not only repeated the criticisms of the bill he had made before the Senate committee, only a few of which had been heeded by the committee, but he also presented the results of a survey just completed by his staff estimating the cost of the plan for the year 1935 at from \$131,000,000 to \$156,000,000. Summing up, his conclusions were that while better provision for retirement annuities for railroad employees is very desirable from every point of view, H.R. 9596 is subject to the following criticisms:

1. The provisions of the bill in important respects are not clear, would be difficult and expensive to admin-

ister, and would breed much controversy and litigation.

2. In certain respects the provisions of the bill would discriminate unfairly between individuals and also between classes of employees.

3. The estimates of cost to both the companies and the employees which are given in the report of the Senate committee are much too low. The annuities which would become payable would be considerably larger both in individual amount and in total volume than the framers of the bill have apparently anticipated.

4. The bill is frankly based on the principle of securing knowledge as to all that may be involved and the results after the system of retirement annuities goes into effect rather than before, and making subsequent adjustments in the light of the knowledge acquired as the result of actual experience.

Judge Fletcher Speaks for Railroads

R. V. Fletcher general counsel of the Association of Railway Executives, replied to statements by certain Senators in the Senate to the effect that no one was opposing the bill and that some railroads were in favor of it, by telling the committee that so far as he was informed and believed not a railroad in the United States is in favor of the bill. He said he was not opposing a rational system of retirement pensions but that the system proposed by the bill sets up no more reserve than the systems now in effect and therefore offers the employees no more assurance, except the mandate of the law, although it doubles the amount of the pension payments and would impose on the railroads an increased expense of \$100,000,000 a year. He said he had not known before of the figures given by Mr. Eastman but they were quite in accord with the estimates made by the railroads which were that the amount required for 1935 to take care of employees not now on the pension rolls, plus the additional cost for those already retired, would be about \$125,000,000, of which the employees would contribute \$28,000,000, leaving \$97,000,000 as an additional burden on the railroads.

In reply to a question by a member of the committee he said he was not urging the constitutional question but that he seriously doubted the power of Congress to treat the railroads as a unit and require one road to contribute to pensions for the employees of another road. Judge Fletcher also presented estimates that on the basis of the present payroll the cost to the railroads would increase to \$115,000,000 in 1941, to \$185,000,000 in 1946, and to \$300,000,000 by 1960. Objecting to the idea of entering upon an experimental plan he said it was a serious thing to experiment with so deep-rooted a thing as an insurance plan, pointing out that in four years the railroads would have accumulated a very large liability for future payments and that the government has spent about \$300,000 in trying to work out a sound system which will be ready by the next session of Congress, while the railroads are paying \$34,000,000 a year under their own pension plans.

Lee Eddy, of the Order of Railroad Telegraphers, appearing for the Railway Labor Executives' Association, estimated that the terms of the bill would cost the railroads only about \$30,000,000 for the first year, in addition to the obligation under their own pension systems. He urged that the plan be put into effect on a temporary basis in order to get it started pending a study by the proposed board of a plan to put it on a permanent basis.

H. L. Ekern, for the Railroad Employees' National Pension Association, told the committee that the railroad employees are absolutely unanimous in favor of the bill. He estimated the cost to the railroads at \$60,000,000 for the first year, saying that some of this would be avail-

able to pay existing obligations but that the bill does not provide definitely for taking them over, merely authorizing the pension board to arrange with the railroads for taking them over. After Mr. Eastman had testified, he was given another ten minutes in which to reply, in order to even up the time allowed to the proponents and the opponents of the bill, and said that Mr. Eastman was under some misapprehension as to the provisions of the bill. He estimated that 50,000 men would be retired the first year but said that if all those of age 60 or over should retire the cost would be increased to \$87,500,000.

C. A. Miller, general counsel of the American Short Line Railroad Association, told the committee that the short lines were opposed to the bill because the railroads as a whole, and particularly the short lines, are financially unable to meet the burden which it would impose upon them. He estimated that the bill would impose on the lines members of the association a minimum burden of \$870,000 a year, and upon all of the short line railways a minimum burden somewhat in excess of \$1,100,000 while in 1933 38 per cent of the short lines failed to earn operating expenses and taxes, and 55 per cent of them failed to earn their fixed charges. If the committee should decide to give the bill favorable consideration, he asked that independent lines having annual gross revenues of less than \$1,000,000 be exempted.

A telegram was read from R. C. Fulbright, chairman of the legislative committee of the National Industrial Traffic League, saying that the league is in favor of a voluntary pension policy but believes that for the government to force a policy would be socialistic in principle and should not be attempted now because of the grave financial consequences.

Representative Keller, who had introduced in the House the bill proposed by the Pension Association, which is substantially the bill now under consideration although it was then opposed by the Railway Labor Executives' Association, told the committee that 90 per cent of the members of Congress are in favor of the bill. Representative Crosser, who introduced the present "compromise" bill in the House after it had been reported by the Senate committee, asked Mr. Eastman why a start could not be made now even if it is necessary to readjust the plan later. Mr. Eastman replied that Congress has not before it the facts necessary for wise legislation on the subject and that it has a mistaken idea of the cost. He pointed out that the estimates had been based on average earnings, whereas the bill provides for pension payments based on the higher earnings of later years or those of the twelve consecutive months selected by the employee. Mr. Eastman's statement included the following:

Estimated Expenditures Under the Plan

In view of the high ratios between annuities payable under the proposed bill, and the current level of pay, it is impossible to justify any other assumption than that all persons will retire during 1935 if eligible by reason of attaining age of 65.

On the basis of the rates given in the accompanying tabulation the total number of retirements by years is as follows (to the nearest 100):

1935.....	67,100
1936.....	15,400
1937.....	16,900
1938.....	16,200

During the year 1935 a total of 185,800 employees will be eligible for retirement. In 1936, an additional 26,900 will become eligible. In 1937 26,600, and in 1938 15,600. At the end of 1938, according to these estimates, there will still remain in service over 100,000 employees eligible to retire under the terms of the bill, most of whom would be eligible to receive substantial benefits if they actually retired. It does not seem possible

(Continued on page 892)

Large Increases in Railway Buying

Improved earnings and P. W. A. loans encourage roads to release heavier orders for supplies and equipment

INCREASES in railway purchases that amount to a strong revival in railway buying are reflected in the orders placed by the railroads of the United States for materials and supplies and for equipment in recent months. From January 1, 1934, to June, available data show that the manufacturers of railway supplies and equipment received orders amounting to approximately \$225,000,000, not counting expenditures for fuel or P.W.A. allotments not yet spent. Last year, purchases from manufacturers during the same period did not exceed \$95,000,000. With fuel added, the purchases up to June 1 are estimated to have totaled approximately \$300,000,000, compared with a total of \$150,000,000 last year.

Based on specific reports from 50 roads operating 200,000 miles of lines, gross expenditures for fuel and for materials and supplies, exclusive of equipment, for the first four months of this year approximated \$193,500,000, an increase of \$69,200,000, or 56 per cent, over the corresponding expenditures in 1933, and \$22,300,000, or 13 per cent, over the expenditures for the same period of 1932. Excluding coal and fuel oil, the figures for purchases from manufacturers of materials and supplies are \$121,422,000 for the first quarter of 1933, as compared with \$69,000,000 in 1933 and \$102,500,000 in 1932. Receipts of new rail up to April 1, 1934, including rail ordered in November and December, 1932, totaled \$14,400,000, as compared with \$2,970,000 in 1933 and \$8,250,000 in 1932, while payments for cross ties totaled \$14,031,000 up to May 1, 1934, as compared with \$8,260,000 in 1933 and \$12,700,000 in 1932.

April purchases of fuel and supplies, exclusive of equipment, totaled \$55,000,000. This was \$10,500,000, or 23 per cent, greater than February, and \$13,200,000, or 30 per cent, greater than January figures; it was larger than the purchases reported for any month since June, 1931.

As compared with purchases in July, 1932, when expenditures reached their lowest point, the April figures show an increase of 95 per cent. Excluding fuel, the figures for April amounted to \$38,800,000, a gain of \$21,200,000, or more than double the total for July, 1932.

Unadjusted for price changes, the purchases for maintenance and operation in April were the highest in 34 months.

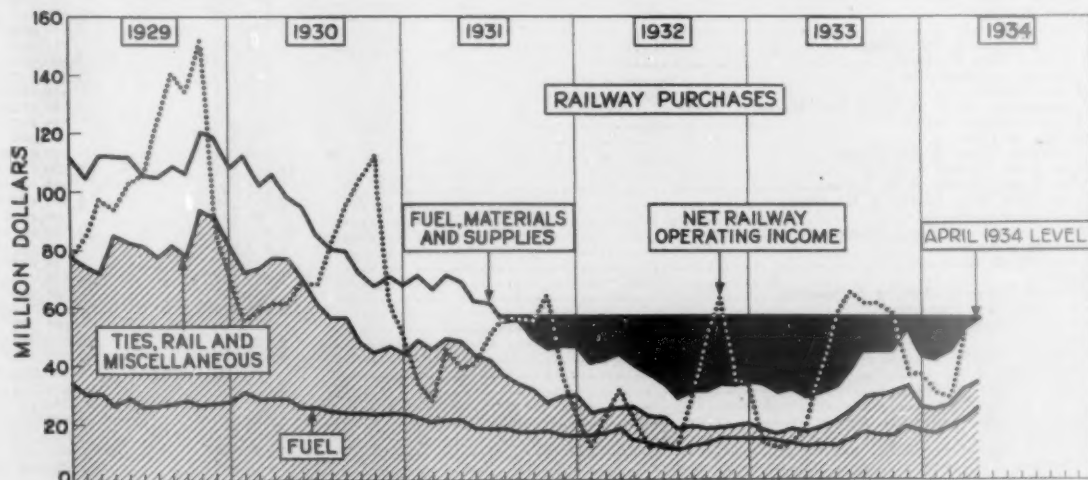
Equipment Orders Rise

During the first five months of 1933, the railroads ordered 3 locomotives, 530 freight cars and 6 passenger cars, while rail orders, including those placed in November and December of the previous year, amounted to approximately 90,000 tons. These orders represent expenditures of approximately \$3,500,000 for new equipment and \$3,600,000 for rail. The corresponding record for 1934 shows orders placed thus far for 74 locomotives, 21,397 freight cars, 306 passenger cars and 705,479 tons of rail, representing commitments of approximately \$70,000,000 for equipment and \$26,000,000 for rail.

Increases from 25 to 100 Per Cent

Measured in dollars, all but 3 of 50 roads reporting purchases of materials and supplies, exclusive of equipment, bought more in the first three months of 1934 than in the corresponding months of 1933, and more than half the number show increases over the corresponding figures for 1932, as well. The gain over the first quarter of 1933 was 23 per cent on the Santa Fe, 94 per cent on the Baltimore & Ohio, 29 per cent on the Boston & Albany, 80 per cent on the Boston & Maine, 75 per cent on the Central of Georgia, 90 per cent on the Chicago & Eastern Illinois, 35 per cent on the Burlington, 34 per cent on the Chicago, Rock Island & Pacific, 180 per cent on the Duluth, Missabe & Northern, 80 per cent on the Elgin, Joliet & Eastern, 45 per cent on the Erie, 41 per cent on the Great Northern, 52 per cent on the Mississippi Central, 145 per cent on the Missouri-Kansas-Texas, 31 per cent on the Nashville, Chattanooga & St. Louis, 80 per cent on the Southern Pacific, 43 per cent on the Union Pacific and more than 200 per cent on the Wheeling & Lake Erie. Purchases of fuel and materials were 73 per cent higher than in the same period of 1933 on the New York Central, 23 per cent on the Central of New Jersey, 72 per cent on the Chicago

Purchases by Class I Railways of Materials and Supplies Since January, 1929. Recovery in Total Purchases Shown in Black



& Illinois Midland, 22 per cent on the Chicago Great Western, 58 per cent on the Louisville & Nashville, 52 per cent on the New York, New Haven & Hartford, and 42 per cent on the Reading.

P. W. A. Loans Factors

While equipment and rail have been largely purchased on government credit, the P. W. A. loans have been a small factor in purchasing for maintenance and operation. From August, 1933, when the Public Works Administration began to function, until May 21, loans totaling \$199,607,800 had been authorized for railroads. Approximately \$85,000,000 of this sum was allotted for the purchase of new cars and locomotives, and approximately \$52,000,000 for materials and supplies, includ-

ing 422,500 tons of rail and 100,000 tons of fastenings, while the remainder is principally for labor.

It is estimated that orders for practically all the rails and approximately \$65,000,000 of the allotments for new equipment had been released prior to June 1, leaving orders for materials and equipment of about \$40,000,000 which have not yet been released. It is estimated that all but \$5,000,000 of the loans will be spent by the end of the year, although up to May 1, the railroads had received only \$57,000,000 of the \$199,600,000 authorized. The new trains ordered by the Union Pacific and the Burlington are prominent among equipment purchases which are not included in the P. W. A. loans.

Most of the purchases, exclusive of fuel, including 340,000 tons, or about half of the rails ordered this season, were made without government aid. A com-

Railway Purchases*

	1932	Fuel	Cross Ties	Other Material	Total	Total Less Fuel
January		\$17,500,000	\$2,400,000	\$21,600,000	\$41,500,000	\$24,000,000
February		17,900,000	2,400,000	23,100,000	43,400,000	25,500,000
March		18,300,000	3,900,000	23,300,000	45,500,000	27,200,000
April		15,000,000	4,000,000	21,800,000	40,800,000	25,800,000
Four Months		\$68,700,000	\$12,700,000	\$89,800,000	\$171,200,000	\$102,500,000
1933						
January		\$15,300,000	\$1,850,000	\$16,150,000	\$33,300,000	\$18,000,000
February		14,000,000	2,000,000	14,100,000	30,100,000	16,100,000
March		13,900,000	2,250,000	15,750,000	31,900,000	18,000,000
April		12,000,000	2,160,000	14,840,000	29,000,000	17,000,000
Four Months		\$55,200,000	\$8,260,000	\$60,840,000	\$124,300,000	\$69,100,000
1934						
January		\$17,263,000	\$2,592,000	\$21,970,000	\$41,825,000	\$24,562,000
February		18,406,000	3,245,000	22,809,000	44,460,000	26,054,000
March		20,209,000	3,394,000	28,612,000	52,215,000	32,006,000
April		16,200,000	4,800,000	34,000,000	55,000,000	38,800,000
Four Months		\$72,078,000	\$14,031,000	\$107,391,000	\$193,500,000	\$121,422,000

* Subject to revision.

Purchases of Fuel, Materials and Supplies—First Three Months

	1934	1933	1932
Ann Arbor	\$162,380	\$115,820	
Atchison, Topeka & Santa Fe	5,771,380	4,625,885	\$6,128,462
Atlanta, Birmingham & Coast	168,385	111,853	133,623
Baltimore & Ohio	4,481,933	2,318,436	2,954,783
Boston & Albany	1,086,540	839,259	984,464
Boston & Maine	2,329,637	1,386,540	1,932,312
Central of Georgia	718,580	407,493	421,408
Central of New Jersey	1,295,343	1,057,189	1,128,690
Central Vermont	289,202	242,004	
Chesapeake & Ohio	2,603,480	2,450,510	2,655,583
Chicago & Eastern Illinois	670,928	350,019	489,064
Chicago & Illinois Midland	138,962	80,890	121,982
Chicago, Burlington & Quincy	3,504,789	2,592,119	3,571,656
Chicago Great Western	717,662	584,207	766,967
Chicago, Mil., St. P. & Pacific	3,483,316	2,846,341	4,126,350
Chicago, Rock Island & Pacific	2,620,697	1,952,112	2,570,538
Clinchfield	238,814		
Columbus & Greenville	64,173	32,996	38,491
Duluth, Missabe & Northern	279,130	99,512	192,841
Duluth, South Shore & Atlantic	126,137	78,894	
Elgin, Joliet & Eastern	295,566	163,018	330,598
Erie	2,812,950	1,942,047	2,933,921
Florida East Coast	285,795	275,284	269,750
Great Northern	2,375,433	1,686,417	2,603,489
Illinois Central	3,926,221	3,043,088	3,785,689
Lake Superior & Ishpeming	18,128	7,912	21,084
Lehigh & New England	262,632	100,692	185,100
Louisville & Nashville	2,588,150	1,631,907	3,092,009
Maine Central	712,915	438,529	
Minneapolis, St. P. & Sault Ste. Marie	1,055,978	838,570	1,031,334
Missouri-Kansas-Texas	1,269,592	519,703	
Mobile & Ohio	379,524	257,040	299,599
Nashville, Chat. & St. Louis	748,754	569,070	578,874
New York Central Lines	16,415,328	9,529,935	10,490,881
New York, Chicago & St. Louis	1,215,316	956,061	1,123,579
New York, New Haven & Hartford	2,052,560	1,365,437	1,866,513
Northwestern Pacific	80,483	90,470	117,785
Pennsylvania and Long Island	11,362,293	11,139,997	13,334,445
Pere Marquette	1,093,706	824,323	673,025
Pittsburg & Shawmut	32,281	18,784	
Reading	2,209,307	1,558,229	2,491,316
Richmond, Fredericksburg & Potomac	304,066	285,508	
St. Louis-San Francisco	2,515,838	1,633,798	1,511,327
St. Louis Southwestern	347,714	195,241	386,827
Southern	4,224,315	2,098,797	4,030,168
Southern Pacific	4,828,237	2,672,278	4,564,771
Tennessee Central	116,150	87,826	75,605
Texas & New Orleans	1,052,982	676,513	1,388,477
Texas & Pacific		540,107	688,302
Union Pacific	5,633,230	3,918,826	4,510,537
Wabash	1,471,787	1,016,560	1,494,864
Western Pacific	419,000	404,400	557,348
Wheeling & Lake Erie	656,000	205,107	214,658

A Summary of P.W.A. Loans Allotted or Signed*

Railroad	Rails, Fastenings and Labor	Equipment and Improvements	Remarks	Total Loans
B. & O.....	\$1,500,000	\$4,900,000	Equipment to be reconditioned includes 240 locomotives and 5,000 freight cars; a loan was also allotted for 2 streamlined trains and building 820 box cars.....	\$6,400,000
B. & M.....	2,230,000	5,088,000	Reconditioning of 25 locomotives, 818 freight cars and 100 passenger cars	7,318,000
C. of Ga.....	120,000	600,000		720,000
C. & O.....		16,876,000	7,800 freight cars and 26 passenger cars.....	16,876,000
C. & E. I.....	240,000			240,000
C. & N. W.....	1,400,000			1,400,000
C. G. W.....		1,200,000	500 box cars.....	1,200,000
C. M., St. P. & P.....	2,066,851	1,965,469		4,032,320
D. L. & W.....		4,666,000	20 locomotives, 986 freight cars, 4 oil-electric locomotives, 500 coal cars	4,666,000
Erie	2,048,000	11,905,000		13,953,000
E. I. M. & W.....		3,500,000	Concrete docks	3,500,000
F. S. & W.....			Repair 170 freight cars.....	250,000
G. T. W.....	250,000			250,000
G. N.....	3,108,000	2,677,000	316 locomotives, 6,374 freight cars, 138 passenger cars.....	5,785,000
G. M. & N.....	210,000	210,000	100 new freight cars.....	210,000
I. C.....	1,437,145	8,810,955	148 locomotives, 12,645 freight cars, 184 passenger cars.....	10,248,100
Interstate		250,000	Rebuild 500 freight cars.....	250,000
K. O. & G.....	255,000			255,000
L. & N. E.....		1,212,000		1,212,000
L. V.....		2,600,000	60 locomotives, 2,000 freight cars.....	2,600,000
Me. C.....	313,000	20,000		333,000
Midland Cont.		36,000		36,000
Mo. Sou.		36,000	Diesel-electric locomotive	36,000
N. Y. C.....	2,500,000			2,500,000
N. Y., N. H. & H.....	1,300,000	5,800,000	900 freight cars, 447 passenger cars.....	7,100,000
N. Y. C. & St. L.....		5,028,500	7 passenger coaches, 1 mail and express car, 15 freight locomotives, 5 switching locomotives, 500 box cars, 675 gondolas, 25 flat cars	5,028,500
N. Y. O. & W.....	235,000			235,000
N. P.....		1,220,000	10 locomotives	1,220,000
Penna.....	3,650,000	77,000,000		80,650,000
P. & W. Va.....	47,000	331,000		378,000
S. & A.....		250,000	100 box cars.....	250,000
S. P.....	5,466,285	6,533,715	740 locomotives, 3,811 freight cars, 406 passenger cars.....	12,000,000
Wabash	573,506	916,294	1,425 freight cars, 12 passenger cars.....	1,481,000
Blanket allotment for rails and fastenings	6,244,467			6,244,467

* Subject to revision.

Orders for New Equipment and Rail—January 1, 1934, to June 1*

Railroad	Locomotives		Freight Cars		Passenger Cars		Rails	
	1934	1933	1934	1933	1934	1933	Nov. 1, 1933 to June 1, 1934	Nov. 1, 1932 to June 1, 1933
Alaska			20					
A. R. A.....				5				
A. T. & S. F.....							34,700	27,349
A. C. L.....							5,000	
B. & O.....	2†				16†		35,000†	
Bang. & Aroos.....							3,500	1,780
B. & M.....	14†				31†		30,000†	
C. & O.....			7,800†		26†		35,000	
C. & E. I.....							4,000†	
C. & N. W.....							25,000†	
C. B. & O.....		3					25,000	
C. G. W.....			500†	500			3,400	3,000
C. M., St. P. & P.....			2†				20,000†	
Clinchfield							2,500†	
D. & H.....							5,000	3,000
D. L. & W.....	20†		500†				12,000	4,000
E. J. & E.....				16				
Erie			3,775†		133†		29,987†	24,549
G. N.....							20,000†	
G. M. & N.....			100†					
I. C.....							20,000†	2,500
L. & H. R.....							1,000	
L. & N. E.....			500†				3,202	
L. V.....	5†							
L. & N.....							17,500	
Me. C.....							4,200†	
M-K-T.....						4	4,700	
N. C. & St. L.....							25,000	
N. Y., N. H. & H.....					50†		4,800	
N. Y. C.....							25,000†	
N. Y. C. & St. L.....	20†		1,200†		8†		38,900†	
N. Y. O. & W.....								
N. P.....	10†				18		4,725†	
Pennsylvania			7,000†				20,000	
P. M.....							6,500	23,500
P. & L. E.....							1,050	
P. & W. Va.....		3					1,900	
R. F. & P.....							1,000†	
Reading							500	1,020
St. L.-S. F.....				5			10,000	
St. L. Sw.....				4		2	18,000	
S. A. L.....							19,215	
S. P.....							40,000†	
Southern							10,000	
U. P.....					24		25,000	
Wabash							10,000†	
W. Md.....							4,000	
Total	74	3	21,397	530	306	6	705,479	90,698

* Subject to revision.

† Purchased with P.W.A. money.

parison between the purchases of roads receiving government aid and those that have not received such aid up to the present is of interest. A list of 48 roads for which comparative figures are available contains 30 roads in the first group and 18 in the second group. Expenditures of the first group for fuel and for materials and supplies, exclusive of equipment, during the first quarter of the year amounted to \$47,690,510, as compared with \$35,915,206 in the same period of 1933, an increase of 32 per cent. Similar purchases for the second group were \$37,739,880 in the first quarter of the year, as compared with \$25,765,925 last year, an increase of 47 per cent.

Purchases and Earnings

These increased purchases reflect increasing pressure on the railroads to resume repair work and improvement of equipment, particularly passenger equipment; they also reflect the improved earnings. Demand for increased buying for replacement has been insistent for several months, but until recently there was no money

Materials and Supplies on Hand—March 31

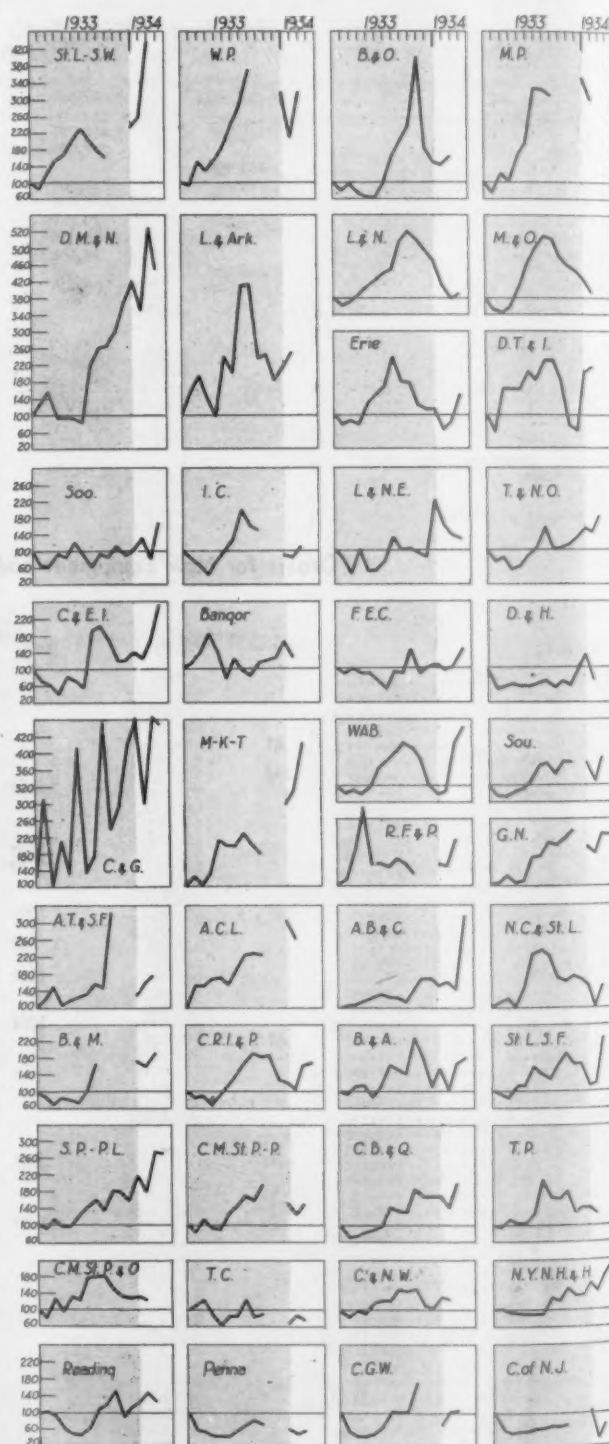
	1934	1933
Boston & Albany.....	\$1,510,327	\$1,445,182
Boston & Maine.....	5,001,690	5,349,663
Central of New Jersey.....	1,922,691	1,941,361
Central Vermont.....	539,743	556,148
Chesapeake & Ohio.....	4,232,463	4,233,665
Chicago & Illinois Midland.....	304,858	220,842
Chicago, Burlington & Quincy.....	7,985,054	9,419,489
Chicago, Milwaukee, St. Paul & Pacific.....	8,656,600	9,015,586
Chicago, Rock Island & Pacific.....	5,343,942	5,891,297
Columbus & Greenville.....	134,111	112,720
Duluth, Missabe & Northern.....	989,588	1,191,621
Duluth, South Shore & Atlantic.....	314,090	422,793
Elgin, Joliet & Eastern.....	1,140,247	1,114,408
Erie.....	3,244,522	2,924,644
Florida East Coast.....	1,562,535	1,545,322
Illinois Central.....	7,737,506	7,582,220
Kansas City Southern.....	1,372,762	1,395,888
Lake Superior & Ishpeming.....	204,471	189,699
Lehigh & New England.....	448,175	323,685
Louisville & Nashville.....	9,613,577	9,302,917
Minneapolis, St. Paul & Sault Ste. Marie.....	2,094,797	2,694,699
Missouri-Kansas-Texas.....	2,733,518	2,581,850
Mobile & Ohio.....	685,643	568,322
New York, Chicago & St. Louis.....	1,611,561	2,321,583
New York, New Haven & Hartford.....	5,699,299	6,089,444
Northwestern Pacific.....	270,138	503,806
Pere Marquette.....	1,227,974	1,561,281
Pittsburg & Shawmut.....	104,339	81,559
Reading.....	5,165,102	5,366,610
Richmond, Fredericksburg & Potomac.....	722,478	766,289
St. Louis—San Francisco.....	4,076,308	2,791,918
St. Louis Southwestern.....	2,091,189	2,635,385
Southern.....	5,569,258	4,946,781
Southern Pacific, Pacific System.....	9,344,761	13,786,996
Tennessee Central.....	218,712	209,555
Texas & New Orleans.....	4,092,928	4,160,057
Union Pacific.....	15,151,636	13,549,374
Wabash.....	1,924,635	2,881,044
Western Pacific.....	1,782,861	1,856,757

with which to obtain the material. This condition has been eased considerably by the increased earnings of the past six months and by the funds which have already been provided by the federal government, or which are under consideration.

Purchases, while still below expenditures made for materials and supplies and equipment prior to 1930, show substantial increases in their ratio to operating revenues and to the net, after deducting operating expenses and taxes. For the first three months of 1933, gross operating revenues were 44.5 per cent of the corresponding figure in 1929, and, during the first three months of 1934, they increased to 53.5 per cent; meanwhile net operating income increased from 13 per cent of the 1929 figure during the first quarter of 1933 to 43 per cent of the 1929 figure in the first quarter of 1934. Purchases, exclusive of fuel and equipment, increased from 26 per cent of the 1929 figure in the first quarter of 1933, to 37 per cent in 1934, while the March, 1934, figure was 44.5 per cent of that for the corresponding month in 1929. It will be seen from these figures

that purchases declined more sharply than revenues during the last three years, indicating the state of under-maintenance in the railway plant, but that the increase in buying this year as compared with 1933 was greater than the increase in gross revenues. Reduced to figures, the ratio of purchases, exclusive of fuel and equipment, was 17.4 per cent of the revenues in the first three months of 1929, declined to 8 per cent of the revenues in 1933 and increased to 10.3 per cent in 1934.

In spite of this increase in the volume of purchases, the operating necessities of the railroads are growing



Purchases, Exclusive of Fuel, Ties and Rails, January, 1933, to May, 1934—January, 1933, Taken as 100. Data Missing Where Breaks Occur in Charts

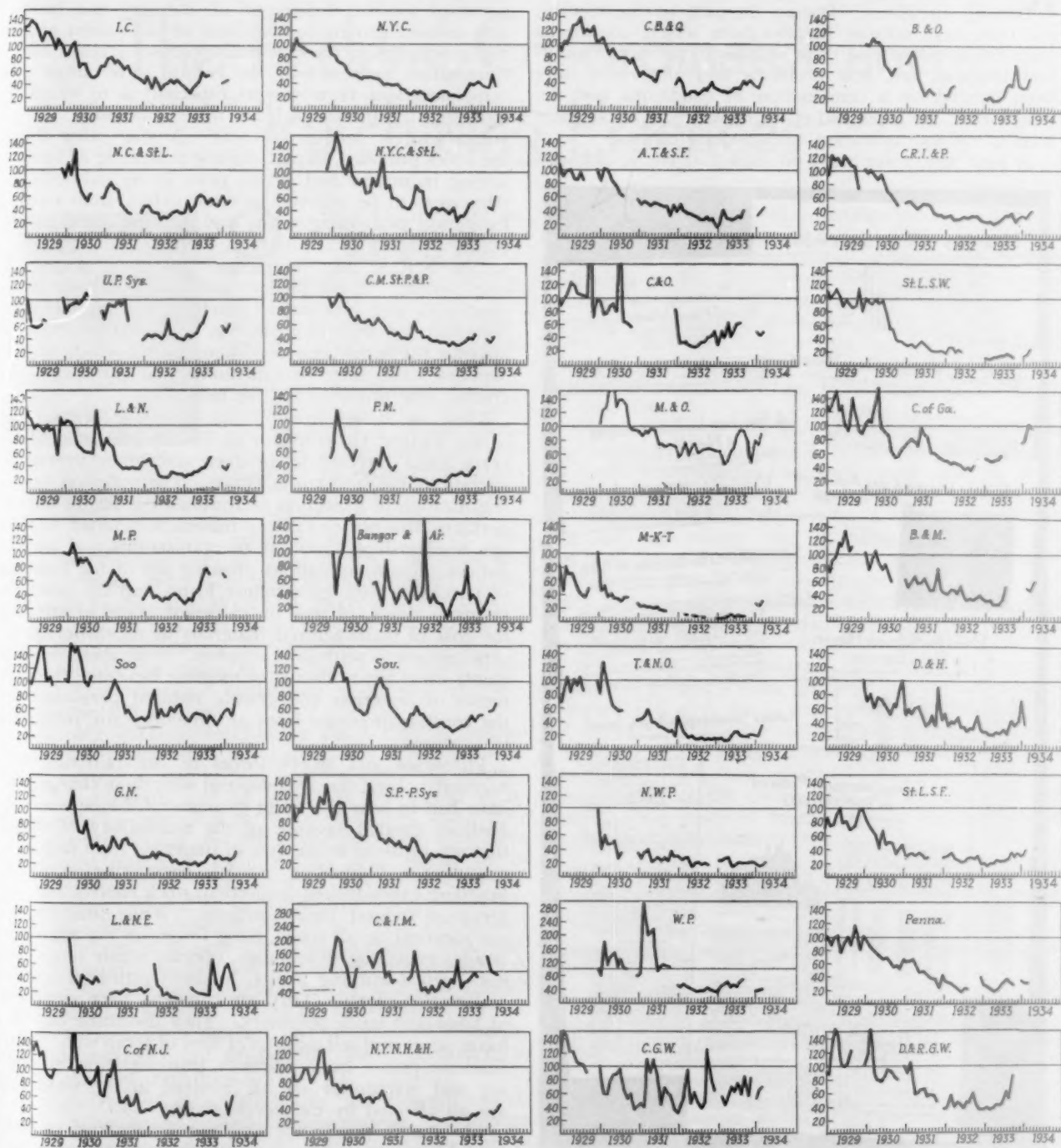
still faster. Disregarding the demand for such modernization programs as air conditioning, lighter weight trains, etc., official figures of the railroads showed that 14.7 per cent of the total freight cars were in need of repairs on March 1, as compared with 13.2 per cent on April 1, 1933; 9.7 per cent on April 1, 1932; 7.3 per cent on April 1, 1931; and 5.9 per cent on April 1, 1930. Beginning with 1931, the reports of locomotives awaiting repair were revised to exclude locomotives requiring only running repairs. Nevertheless, the percentage of locomotives reported in need of repairs on April 1, 1934, was 22.6 per cent, as compared with 20 per cent in 1933, 14.5 per cent in 1932, and 10.9 per cent in 1931. When consideration is given to the fact that the tendency of the past three years has been to lower, rather than

to raise, the standards of equipment inspection, these figures plainly show the maintenance situation confronting the carriers.

Supplies on Hand

Book values of materials on hand, which are always factors in purchasing programs, totaled \$295,161,000 on April 1, as compared with \$295,000,000 on January 1, and \$311,950,000 a year ago. Fuel balances on April 1 amounted to \$18,600,000, comparing with \$18,160,000 on January 1 and \$21,000,000 a year ago. Rail stocks amounted to approximately \$43,000,000 on April 1, as compared with \$32,500,000 last year, reflecting large stocks of relay rail, as well as new rail awaiting place-

(Continued on page 885)



Purchases of Fuel and Materials and Supplies, Month by Month, on Individual Roads, with Expenditures in January, 1930, Taken as 100 in Each Case—Data Missing Where Breaks Occur in Charts

What Has Happened—A Review of Railway Supply Work

Events of past year required extensive mobilization of supply forces to meet new problems in purchasing and handling supplies

RAILWAY purchases are so large and so diversified that when anything happens to them it is felt in many directions. During the past twelve months, not only have railway supplies been widely considered from the standpoint of their relation to railway earnings and business, but new problems and alignments have been created by a combination of conditions and developments, the force and effect of which have not been seen in railway operation since federal control.

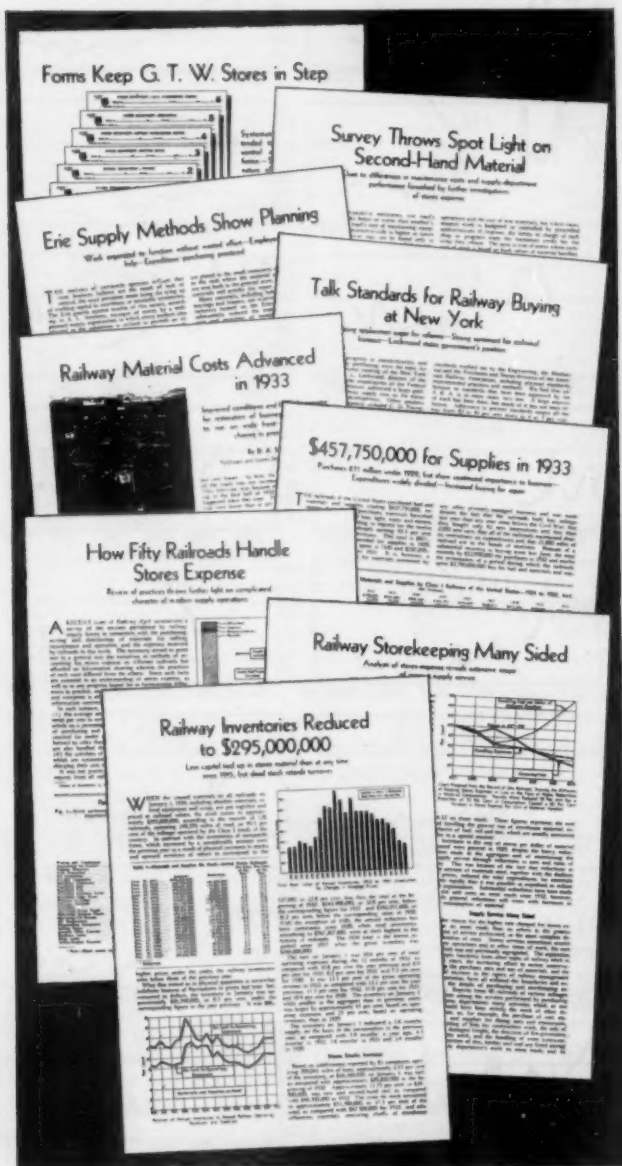
A year ago, there were no industrial codes, although

they had been authorized by the National Industrial Recovery Act passed by Congress in March. This act provided for the division of all industry and business into distinct groups on the basis of occupation and for the governing of these several groups by codes of fair competition approved by the federal government after compliance with requirements, especially as to wages and working conditions, which were calculated to restore business and employment. Among other things, the codes provided, in part, for the pro-rating of business among industries and led to price fixing, while industries were to be relieved to some extent from existing legislation prohibiting trusts and monopolistic combinations. Pending their adoption, industry was regimented to the N.R.A. plan by pledges governing wages and employment. These pledges and codes embody terms, conditions and provisions, which, if not entirely new, have had the effect of confusing, impairing or otherwise altering the terms and conditions under which railway supplies have been manufactured and purchased and created new problems for the railroads.

Close on these developments came the organization of the Federal Co-ordinator of Transportation, with investigations directed to produce economies in railway operations not hitherto achieved. The inclusion in that organization of a Section of Purchases indicates the importance attached to railway materials. Added to these are receiverships, financial reorganizations and consolidations; also complications growing out of the financing of purchases with government loans, and the adoption, in many states, of new or increased taxes so affecting the cost of manufactured materials as to encourage rearrangement in sources of supplies. With these developments came the problems of meeting increasing requirements of materials and greatly reduced personnel and the constant pressure from all directions for reductions in expenses.

Purchases and stores forces of the railroads have necessarily been deeply concerned with these changes and have had to bear the brunt of many of the new responsibilities created because of the multiplicity of details that are involved in the flow of materials from factory to consumer. Estimating needs, negotiating contracts, guarding expenditures, inspection, stock control and conservation suggest their functions. While practices are not identical on all roads, these forces, in the aggregate, besides managing storehouses, operate repair shops, saw mills, wood-working plants, lumber-treating plants and reclamation plants. They are shippers, large employers of labor and truck operators. They dismantle cars and locomotives and sell millions of tons of scrap iron. Specifications, prices, trade practices, transportation, accounting and inventories are all involved in the work and are all affected by the developments.

Changes in purchasing and stores personnel on individual lines have been less numerous during the past year than previously but include further reductions in



What Happened in Railway Supply Work, as told by the Railway Age

supervisory forces on several roads and further departures from rigid departmentalization in supply service. Further pooling of the office work of purchases and stores departments has been carried out on some roads, while in other cases storekeepers again report to mechanical forces. The further curtailment of statistical work and the reduction or complete elimination of classified material records are also among the incidents of the period.

Significant of the situation is the wide-spread effect it has recently had in bringing supply forces of different roads together on a different basis than before. While some of the problems are considered temporary, the

opinion is general that changes of a permanent character are necessary and that the customary methods of study are no longer adequate and this year has seen the wide-spread mobilization of supply forces to this end.

The Purchases and Stores division of the American Railway Association has been deeply involved with the situation. Being the representative body of the supply forces, it has, upon the initiative of its officers or upon the application of its members, assumed additional responsibilities and has taken various steps directed to make its work more effective. What these steps were and what action the Federal Co-ordinator has taken during the past year are reviewed on the pages following.

The Federal Co-ordinator and Purchasing Practices



(c) Underwood & Underwood

R. L. Lockwood
Director, Section of Purchases,
Federal Co-ordinator

ON June 16, the date on which this issue appears, the office of the Federal Co-ordinator of Transportation is exactly one year old. This office was created by the Emergency Transportation Act of 1933, which provides that the railroads and the co-ordinator shall work together in searching out economies in railway operation and management, and particularly in eliminating wastes that have resulted from the lack of effective co-operation of the railroads with each other. Besides the establishment of three regional organizations to co-ordinate with three organizations formed by the railroads in the East, West and South, a central organization was created, one unit of which was called the Section of Purchases. The general objective of this section is the elimination of avoidable waste in the selection, procurement and application of railway materials, equipment and supplies.

The big question confronting the section is not so much one of purchasing as of standards. Promptly with its organization, the section began a survey of existing A.R.A. standards and of standards for similar items developed by individual roads, by equipment and supply manufacturers, and by other organizations that have developed standards for materials used wholly or in part by railroads. The purpose of these surveys was to develop information regarding the extent of adherence to existing standards and to point the way toward fuller utilization of such standards as appear important. The plan provides that information regarding new standardization and simplification projects will be developed from the same sources and that arrangements will be made whereby each standard can be reviewed at regular periods and modified or revised, where necessary, to meet changed conditions.

While the railways individually and through associations have made substantial progress in standardization, notably in connection with equipment which must be interchangeable in use, it is believed that important economies are possible through further standardization,

while an even larger field for saving money is available by reducing the variety of types, dimensions, specifications and other characteristics of materials used by individual roads. The theory behind these surveys, as outlined by the co-ordinator, is that a single road may accomplish substantial savings by reducing to a minimum the variety of items bought, but if other roads use different standards the general situation may be as complicated as though each road bought every type and size of each item.

The co-ordinator has also launched a study of existing research organizations to determine the advantage of better co-ordination of such work and to study methods for investigating new products, devices and methods, establishing improvements and practice for inspection and testing, and initiating research in new fields of potential value to the railroads. In this undertaking, the plan of the co-ordinator has been to work with and through the existing railway organizations so far as possible and to accomplish the desired results by co-operation, wherever possible.

In carrying out its program, the Section of Purchases submitted a questionnaire last year to the Purchases and Stores division, A. R. A., and to the supply departments of individual roads for the purpose of determining the degree to which practices specifically recommended by the division have been adopted by the railroads, and the co-operation of the division and its members was enlisted in the study of several specific opportunities for economies, as follows:

1. Simplification of numerous kinds of railroad equipment, materials and supplies, including the expense of storing, handling and distribution.
2. Establishing appropriate "measuring sticks" for gaging the efficiency of the purchases and stores departments of the railroads.
3. Developing uniform methods of cost and other accounting, so that direct comparisons may be made of the numerous operations involved in procuring and applying railroad material.
4. Better co-ordination of the work of existing committees and other organizations, both in and out of the railroad industry, for the purpose of avoiding duplication.
5. Establishment of some form of central technical or engineering organization serving all of the railroads, to work continuously on such matters as the investigation and testing of new materials, devices and methods, the promotion of standardization and simplification of physical items and practices, and the investigation of possible economies to be gained through consoli-

dated inspection and testing and through more economical transportation and handling of raw materials.

Members of the staff of the section are visiting railway storehouses, as opportunity affords, to see conditions and operations first hand, and have employed, on such occasions, a standard list of questions which are intended to assist them in obtaining the desired information with the least expense and confusion to the departments concerned. It has been repeatedly stated in these investigations that the object of such work is to ascertain the facts before forming conclusions as to what, if anything, should be done, and not merely to search for facts to prove any preconceived opinions or views held by individuals.

The Section of Purchases has also established itself as a clearing house for suggestions from all sources looking to economy and improvement in railway purchasing, and has engaged upon a program of conferring privately and publicly with railway officers and manufacturers for the purpose of explaining the co-ordinator's policies, reconciling differences of opinion and securing co-operation.

Progress in Scientific Research

During October, the Science Advisory Board of the National Research Council, which had been created by President Roosevelt under the Emergency Act, appointed, at the request of the co-ordinator, a committee to study scientific research in conjunction with the railroads and to promulgate a plan for carrying on such research in connection with railroad material and equipment. The committee is composed of men who have contributed much to scientific progress. As presently constituted, the personnel is as follows:

F. B. Jewett, president, Bell Telephone Laboratories, Inc., chairman.

Maurice Holland, director, Division Engineering and Industrial Research, National Research Council, director.

C. F. Kettering, president, General Motors Research Corporation.

Dr. John Johnston, director of research, United States Steel Corporation.

Dr. Francis C. Frary, director of research, Aluminum Company of America.

Dr. E. K. Bolton, chemical director, E. I. du Pont de Nemours & Co.

Dr. Harold G. Moulton, president, Brookings Institution.

Prof. D. C. Jackson, head of the department of electrical engineering, Massachusetts Institute of Technology.

Dr. Isaiah Bowman, chairman, National Research Council, ex-officio member.

Dr. A. A. Potter, dean of engineering and director, engineering experiment station, Purdue University.

R. L. Lockwood, director, Section of Purchases.

This committee has already held several meetings and is formulating definite recommendations for the co-ordinator.

The Section of Purchases has engaged upon an investigation of the condition of equipment, including shop tools, which is calculated to show possible economies through repairs and replacements and to develop further information regarding standardization and simplification.

Boards to Review Purchases

Most recent among the developments in the co-ordinator's program relating to railway purchasing was the proposal to establish regional reviewing boards composed of railway purchasing officers, who would meet at least once a month for the purpose of reviewing the purchase orders placed by the railroads for materials and supplies. The plan has been under consideration for some time, and it is believed that such a review will result in direct benefit to the railroads, since the information developed will furnish accurate and detailed in-

formation regarding current prices and price trends, and will be useful in promoting the application of A. R. A. standards. It should also disclose possibilities for more economical routing of material from the sources of supply to the point of delivery on the railroad. The final plan for this work awaits the outcome of a trial period which was begun in Chicago May 1, when six railroads began filing copies of orders for certain classes of material for examination by a reviewing board which had previously been appointed from members of the Purchases and Stores division.

Standards for Track Material and Lumber

By October 6, the co-ordinator recommended to the carriers' regional co-ordinating committees, the adoption of standards for box cars, lumber, rail and rail accessories; also the adoption of a simplified invoice form, and improvement in the methods of selecting and purchasing coal. The Car Construction committee of the Mechanical division of the A. R. A. had completed the development of a standard 50-ton steel, single-sheathed box car, and some committee work had been undertaken on standardization of hopper, gondola, refrigerator and tank cars. It was recommended that the standardizing of equipment should be completed by the railroads and the standards adopted by all carriers.

In connection with the standardization of lumber, which covers nomenclature, grades and dimensions, it was pointed out that the Committee on Specifications of Materials of the Mechanical division, A.R.A., had completed its work on lumber standards for the use of mechanical departments and that these standards conformed in general to standards adopted by the Engineering division, while both sets of standards conformed in general to American lumber standards, and it was recommended to the regional organizations of the railroads that the standards developed by all three groups should be brought into conformity within the limitations imposed by technical requirements and adopted by all the railroads.

Attention was called to the project contemplating the establishment of not more than five standard weights of rail, each to be rolled in one section, and to the actual or pending adoption by the A.R.A. of the 131-lb. and 112-lb. rail. A recommendation was made that these standardization projects should be completed promptly and the standards adopted in place of the great diversity of weights and sections now in use.

Owing to the large number of patents on track fastenings, which the co-ordinator cannot ignore, the recommendation on track fastenings was confined to the adoption of specifications governing certain details, such as the size and spacing of bolt holes in rail ends. Cross licensing of patents, as effective in the automobile and other industries, was suggested as a possible remedy for the situation.

The simplified invoice form was developed under the auspices of the Department of Commerce in 1926, approved by the Purchases and Stores division, A.R.A., in 1927, and approved by the Railway Accounting Officers' Association in August, 1933. Its mandatory adoption by all railroads was recommended by the co-ordinator, after it was found that the majority of the railroads are using the invoice at the present time.

Fuel Purchasing

The co-ordinator's action on fuel purchasing was based largely on a report made by the I.C.C. previous to the creation of the office of Federal Co-ordinator, to the effect that the railroads have in many instances been

(Continued on page 885)

A Busy Year for the Supply Division

By G. E. Scott*

Chairman, Division VI, Purchases and Stores, American Railway Association



G. E. Scott

THE past 12 months have without any question been the most active and unusual months that the Purchases and Stores division of the American Railway Association has faced since it was organized in 1920. It was a period that created many new problems for the supply forces of the railroads and required extensive readjustments in organization. In a word, it has demanded of the division a new

and broader order of service. The division is a successor to the Railway Storekeepers' Association of pre-war days and was established for the purpose of co-ordinating the methods and practices employed by the railroads, and with the object of creating the highest efficiency and economy in the purchasing, care and distribution of materials and supplies. That it represents a broad field of railway operation is illustrated by the fact that in the five years previous to 1930, the railroads of the United States expended an average of \$1,385,000,000 a year for materials and supplies, not counting cars and locomotives, and carried more than \$500,000,000 of materials and supplies in stock. This stock has since been reduced to \$295,000,000.

The depression has crippled railway purchasing and stores forces, as well as other organizations. Pay-roll reductions and readjustments in personnel have to some extent temporarily curtailed committee work. Retrenchment's have disrupted some organizations and destroyed many fine objectives. New problems have been created by financing railway purchases with government loans, by the adoption of codes governing the prices and terms of sale of manufactured goods, and by the programs of the Federal Co-ordinator, and all this has had a bearing on the division's work. Pressure for economy mainly dictated the decisions to refrain from holding regular annual meetings for two years. The division has not gone out of business, however. Instead, supply forces are still aware of their responsibilities and alert to their opportunities in the present situation.

The General committee, has had the responsibility of navigating the uncharted seas of the past two years and for the ensuing year.

General Committee

Chairman, G. E. Scott, purchasing agent M-K-T.
Vice-chairman, C. B. Tobey, general storekeeper, L. V.
F. S. Austin, purchasing agent, B & A.
J. L. Bennett, purchasing agent, C. of Ga.
E. A. Clifford, general purchasing agent, C. & N. W.
J. U. King, general storekeeper, A. C. L.
J. C. Kirk, assistant general storekeeper, C. R. I. & P.
L. P. Krampf, supply agent, M. P.
H. P. McQuilkin, assistant purchasing agent, B. & O.
A. C. Mann, vice-president, I. C.
H. M. Smith, general storekeeper, N. P.
A. L. Sorensen, manager of stores, Erie.
L. C. Thomson, manager of stores, C. N.

G. H. Walder, purchasing agent, C. M. St. P. & P.
C. E. Walsh, general purchasing agent, Pennsylvania
L. B. Wood, general storekeeper, S. P. (Tex. & La.)
W. J. Farrell, secretary.

Because of the many new and difficult questions which required the attention of the division, this committee early decided to organize its past-chairmen into an advisory committee, and special efforts have been made to keep the members of both committees in close touch with each other throughout the year.

One of the first undertakings since the last meeting was to compile a review of the division's accomplishments and investigations for inclusion in a book prepared by the American Railway Association, entitled "The Railroads in Laboratory", which was distributed to acquaint the public more fully with the progress in transportation research.

As repeatedly explained by Director R. L. Lockwood of the Section of Purchases of the Federal Co-ordinator's staff, the plan with respect to purchases and stores, and also with respect to some phases of standardization, simplification and research, contemplates working through the Purchases and Stores division. At the direction of the executives of the A. R. A., the division was early committed to co-operating with the co-ordinator's staff and its reports and recommendations furnish one basis for his investigations. In the furtherance of its regular work, the subject committees of the division have been continued for the past two years with such changes in personnel as were required by conditions and provisions made for the acceptance and issuance of the reports to its members as information until their adoption could be ratified at a regular annual meeting or by letter ballot.

Subject Committees

Recommended Rules and Practices: H. R. Toohey, inspector of stores, C. M. St. P. & P.

Classification of Material: R. G. Benson, classification inspector, Erie.

Reclamation and Scrap Handling: J. J. Collins, general foreman, scrap and reclamation plant, Erie.

Comparisons of Stock Reports and Stores Expense: O. A. Donagan, general storekeeper, B. & M.

Forest Products: C. C. Warne, purchasing agent, N. Y. C.

Purchasing and Storekeeping for Highway Motor Vehicles: R. C. Harris, general storekeeper, Pennsylvania.

Control of Shop Manufacturing Orders for Stock Material: G. J. Hunter, traveling material supervisor, A. T. & S. F.

Fuel: J. M. Johnston, fuel agent, M-K-T.

Control of Material Stocks and Co-ordination Procurement with Actual Needs: J. V. Miller, assistant general storekeeper, C. M. St. P. & P.

Pricing and Inventory: U. K. Hall, general purchasing agent, U. P.

Purchasing Agent's Organization, Practices and Office Records: C. R. Painter, purchasing agent, N. Y.

N. H. & H.

Stationery and Printing: J. T. Van Horn, stationer, M. P.

Economical Handling of Materials

—Protection from Deterioration: J. G. Stuart, assistant purchasing agents, C. B. & Q.

Simplification and Standardization of Stores Stocks: A. G. Follette, general material supervisor, Pennsylvania.



W. J. Farrell, Secretary

* Purchasing Agent, Missouri-Kansas-Texas.

Terminal Railway Storekeeping: C. W. Yeamans, purchasing and supply agent, C. & W. I.

Capacity Loading and Prompt Handling of Company Material Cars: J. S. Genter, general storekeeper L. & N. E.

Joint Committee on Metric System: J. W. Gerber, general storekeeper, Southern.

Purchasing, Storage and Distribution of Equipment and Supplies Used in Dining Cars, Hotels and Commissaries: H. N. Mellor, commissary agent, Pennsylvania.

New Ideas and Economics: A. N. Laret, assistant to chief purchasing officer, St. L.-S. F.

Purchase of Special Devices and Commodity Purchases: P. L. Grammer, assistant purchasing agent, Pennsylvania.

Exchange of Surplus Material: A. W. Munster, vice-president, B. & M.

Material Guarantees—General Practice as to Guarantees—Failures, Methods of Handling: M. E. Towner, general purchasing agent, W. Md.

Adoption of Recommended Practices:

P. L. Grammer, assistant purchasing agent, Pennsylvania.

General Reclamation Committee

Co-ordination with other departments for the purpose of developing standards of practice in all phases of reclamation has been provided for by the establishment of a general reclamation committee, consisting of personnel selected by the Mechanical and Engineering divisions, as well as the Purchases and Stores division. The representation on this committee is as follows:

Division VI (Purchases and Store) Representatives:

I. C. Bon (chairman), superintendent of reclamation, Wabash.
J. J. Collins, general foreman, scrap and reclamation plant, Erie.

A. L. Prentice, manager scrap and reclamation, N. Y. C.
W. P. Stewart, supervisor of scrap, I. C.

Division V (Mechanical) Representatives:

J. W. Bukey, foreman reclamation plant, Pennsylvania.
L. R. Wink, assistant superintendent car department, C. & N. W.

J. McMullen, superintendent car department, Erie.
F. J. Swanson, general car department supervisor, Milwaukee.

Division IV (Engineering) Representatives:

C. J. Geyer, assistant to vice-president, C. & O. (representing the Construction and Maintenance section).

F. W. Pflieger, signal engineer, U. P. (representing the Signal section).

J. H. Davis, chief engineer electric traction, B. & O. (representing the Electrical C. B. Tobey (chairman ex-officio) L. V.

Joint Committee on Stores Expense

A joint committee with the Railway Accounting Officers' Association is making a study of the complex problems of material store expense, the Division VI representatives being as follows:

J. F. Riddle (chairman), statistician, Pennsylvania.
M. E. Baile, assistant supply agent, M. P.
W. S. Morehead, assistant general storekeeper, I. C.

Joint Committee on Inspection of Materials

Another committee has been collaborating with the Mechanical and Engineering divisions for most of the past year in connection with the inspection of materials, represented as follows:

A. C. Mann (chairman), vice-president, I. C.
E. A. Clifford, general purchasing agent, C. & N. W.
F. D. Reed, purchasing agent, Rock Island.
G. H. Walder, purchasing agent, Milwaukee.
C. E. Walsh, general purchasing agent, Pennsylvania.

While the studies of these committees are not as yet sufficiently complete as to permit definite description of their accomplishments, it is evident that augmented efforts are being made to co-ordinate unusual problems with other divisions of the association.

Recommended Practices

The problem presented by the co-ordinator's investigations into preventable waste was partially met by

establishing a special committee under the direction of P. L. Grammer, assistant purchasing agent of the Pennsylvania, for the immediate purpose of compiling a list of the most important practices which have been recommended by the division in the past and determining the degree of adherence by the railroads. Expedition in this work will be promoted by referring the result of this committee's survey to the proper standing subject committees for investigation and recommendation, particularly as to the extent to which the practices may be made effective on non-adhering lines.

Standardization and simplification being among the most important subjects before the division, A. G. Follette, general material supervisor, the Pennsylvania, and his committee have spent much time and effort in co-operating with R. L. Lockwood and staff, as well as investigating items especially susceptible of simplification, and their work is worthy of commendation and observance.

Purchasing Methods

The co-ordinator's projects for improvement in fuel purchasing methods and for providing uniform specifications, inspection and test, were referred to a research committee of the Mechanical division. The importance of the subject, however, has caused the Purchases and Stores division to increase the personnel of its fuel committee from two to eight members, to provide the fullest measure of co-operation and representation of fuel production areas.

The division has included the director of the Section of Purchases or his representative at all meetings of the General committee, and, at his request, following the co-ordinator's first report to the President of the United States, known as Senate Document No. 119, obtained consent of the executives of the A.R.A. to appoint a committee to consider the plan of creating regional boards of purchasing officers to review all orders placed by railroads for supplies, for the purpose particularly of determining variance in material prices, uneconomical and circuitous routing and adherence to standards. This board consists of:

F. D. Reed, purchasing agent, C. R. I. & P. (chairman).
M. J. Collins, general purchasing agent, A. T. & S. F.
A. C. Mann, vice-president, I. C.
C. E. Walsh, general purchasing agent, Pennsylvania.
G. E. Scott, purchasing agent, M-K-T. (chairman ex-off.)
W. J. Farrell, secretary.

This committee began on May 1 of this year to receive the orders of six large railroads having headquarters in Chicago, which will be studied before further boards are created. It is probable that the test period will extend for three months or more.

Organize to Study Codes

While little in evidence, the code situation is receiving much attention from the railroads. Faced with various difficulties and perplexities resulting from the adoption of codes, including impending increases in railway costs and also anticipating the necessity of conferring with industries and with governmental agencies, a committee of purchasing officers was appointed last September by the Association of Railway Executives to deal with interpretations of and inconsistencies in codes which had been adopted by the National Recovery Administration. The committee first consisted of a purchasing officer from each co-ordinating region, but was subsequently enlarged to include an alternate for each region, and now consists of the following permanent members:

C. D. Young, vice-president, Pennsylvania (chairman).
A. W. Munster, vice-president, B. & M.

A. C. Mann, vice-president, I. C.
 J. L. Bennett, purchasing agent, C. of Ga.
 D. C. Curtis, chief purchasing officer, C. M., St. P. & P.
 E. A. Clifford, general purchasing agent, C. & N. W.
 C. E. Scott, chairman, Division VI, A. R. A. (chairman ex-off.).

The division was later authorized by the Association of Railway Executives to appoint special code committees, when advisable, one for each commodity, for the purpose of dealing with codes in the making. Examples of action taken under this authority are the appointment of D. C. Curtis, chairman of the committee to study the proposed Bolt, Nut and Rivet code, A. C. Mann, chairman of a corresponding committee to review the proposed code for rail and special track equipment, and E. A. Clifford, chairman of the Forest Products Code committee, embracing lumber, ties and preservative treatment. Committees on proposed codes have adopted the policy of conferring with the committee on adopted codes, commonly known as the Young committee, before entering into negotiations with the National Recovery Administration or the industries involved.

Recently, special committees have been organized by the railroads in the West and the East to meet problems arising in the purchase of fuel under the Coal and Petroleum codes, and the work of these committees is also followed closely by the Code committee. A statistical committee is also functioning for the purpose of assisting the Code committee in the preparation of data, when needed.

Group Meetings

In addition to the above, the railway supply department officers, with the co-operation of the division, have, during the past 12 months, held group meetings periodically in various parts of the country for the purpose of discussing problems of immediate concern, keeping the membership of the division informed of developments and providing a means of securing joint action where required. These meetings are under the leadership of the following:

Eastern Group—A. W. Munster, vice-president, B. & M.
 Southern Group—J. L. Bennett, purchasing agent, C. of Ga.
 Western Group—D. C. Curtis, chief purchasing officer, C. M., St. P. & P.

Because of the large territory embraced, the last group has representation from the Southwest, Northwest, central West and far West. Such meetings have been held in various places, are informal and have been attended by the director of the Section of Purchases, or his representative, as well as by spokesmen for the code committees and by a large representation of supply department officers within the region. To secure the most effective co-ordination of the work, the meetings are attended by the chairman and secretary of the division, when possible.

The division this past year also adopted the practice of issuing a news bulletin periodically for the purpose of informing the membership of all developments of immediate interest, including the appointment of committees and special action taken at various meetings.

The results of this mobilization of railway supply department officers have proved gratifying to the sponsors and beneficial to those participating. At a time when interest in co-operative work among railroad forces had begun to lag, it has aroused a new enthusiasm and afforded the means by which the many pressing problems facing the railroads in connection with their purchasing and stores work can be handled more promptly and effectively.

Large Increases in Railway Buying

(Continued from page 879)

ment. Book values of tie stocks amounted to \$67,500,000 on April 1, as compared with \$60,500,000 a year ago, while store stocks on April 1 amounted to \$158,000,000, a reduction from \$190,000,000 a year ago. Inventories include large quantities of material for which there is at least no immediate use, and reserves of active stock are at their lowest point in years. The extreme degree to which stored equipment has been robbed to provide repair parts for equipment in service increases the pressure for new materials.

Purchases and Employment

The expansion of railway buying which has occurred will continue with further improvement in railway earnings and with the increased recognition by the federal government of the relation of railway purchasing to business recovery and the importance of government aid in financing needed expenditures for railway rehabilitation and improvement until normal credit machinery is restored. The effect on industrial activity and employment alone has already been demonstrated. In a statement which has just been made to the P. W. A. by F. C. Wright, director of the Division of Transportation, more than 100,000 men and women are reported to have been called back to work in every section of the country as a result of the work undertaken by railroads with P. W. A. loans up to the present time. Of these, approximately 40,000 are railway employees, while the balance are engaged in industries where raw and finished materials are being produced, including iron and coal mines, copper mines, steel foundries, rail mills, and forest and lumber mills. The production of rails, fastenings and materials for cars and locomotives which have been ordered by railroads is contributing substantially to the continued high output of iron and steel industries.

The Federal Co-ordinator and Purchasing Practices

(Continued from page 882)

paying more than the commercial price for coal because of traffic considerations, and also that coal purchasing methods have been lax in other respects. The railroads were requested by the co-ordinator to adopt standard performance specifications for coal, based on chemical and physical properties affecting fuel value, and to insist upon standard inspection and test methods similar to those used by government organizations and by many large industries and utilities.

While the problems and conditions leading up to the establishment of the co-ordinator's office have resulted in many misunderstandings of its real purposes, this confusion is rapidly being dispelled. With the ground work laid and much information already gathered and digested, progress is expected to manifest itself to an increasing degree during the next few months and, with the interested support which the railroads are giving to the work, confidence is experienced by the director that the co-ordinator's organization, though of a temporary character, will be the means of bringing about permanent improvements in railway operation.

Purchases & Stores Division Holds Annual Meeting



Handling Lumber on the Northern Pacific

Simplification of stock and adherence to recommended practices topics at one-day session at Chicago

HAVING abandoned, for the second consecutive year, the holding of an annual convention of the Purchases and Stores division, American Railway Association, the General and Advisory committees of the division, the latter consisting of the past-chairmen, held a one-day meeting in Chicago on June 8 to receive the reports of subject committees and discuss the work of the association. Approximately 100 members were in attendance at the meeting, including all but one member of the General committee, seven past-chairmen and representatives of various committees. Being a closed meeting, details for publication are limited, but R. L. Lockwood, director, Section of Purchases of the Federal Co-ordinator of Transportation, who was present during the meeting, is understood to have emphasized, during a review of the work of his section, the responsibility resting upon the railroads for positive results in effecting economies through co-ordination. The chairmen in charge of group meetings of purchasing officers, independently organized in the eastern, western and southern regions but allied with the division, reported "very satisfactory" results from this innovation on the railroads, and it was announced that the plan will be enlarged to include group meetings of stores department officers.

A total of 12 reports received from subject committees included detailed results of a survey made to determine the extent to which the railroads are following standard practices which have been recommended by the division and a report proposing and outlining a program for the establishment of committees on simplification and standardization of materials on individual railroads. To expedite the adoption of these reports and reports received

at the last annual meeting of the General committee, it was decided to obtain their ratification by letter ballot. Pending the next annual convention of the division, officers elected in 1932 will continue in office, with C. B. Tobey, vice-chairman of the division assuming the direction of the work of the subject committees, to permit the chairman, G. E. Scott, and the secretary to devote more attention to the increasing number of special problems requiring attention of the division. The reports presented at the meeting are in part as follows:

Comparisons of Stock and Store Expenses

O. A. Donagan, Chairman*

The table indicates the number of railroads, together with the mileage, contributing material stock reports to the division:

Period	Railroads	Mileage
June 30, 1929.....	56	136,421
December 31, 1929.....	82	171,191
June 30, 1930.....	86	158,574
December 31, 1930.....	79	159,720
June 30, 1931.....	98	162,608
December 31, 1931.....	135	231,365
June 30, 1932.....	130	230,730
December 31, 1932.....	133	230,237
June 30, 1933.....	127	218,952
December 31, 1933.....	133	220,502

The committee has considered suggestions from a member of the staff of the Director, Section of Purchases, Federal Co-ordinator of Transportation, that the recapitulation of data from the material stock report should be subdivided between Class I, Class II and Class III railways, switching and terminal companies, and miscellaneous, but, in view of the fact that efforts are being confined to procuring reports from Class I railroads, terminal and switching companies, the inclusion of the Class II

* General Storekeeper, Boston & Maine.

and Class III roads is not considered advisable. The recapitulation will become effective with the report for the period ending December 31, 1933, and will also show similar information for two preceding reports, subdivided as follows:

Groups	Number of Companies	Total Disb. Cols. 1-8	Total On Hand	Average Days' Supply
Class I Railroads	Reporting Mileage			
Terminal and Switching Companies				

The committee has not completed the study of the recommendations made by the committee on suggested forms and standard methods for distributing the expenses.

The attention of the committee was called to the fact that in the monthly report of employees, service and compensation to the Interstate Commerce Commission, purchasing and stores department employees are included under Maintenance of Equipment and Stores, and it was suggested that they be reported separately. The committee does not feel that the form has sufficient value to warrant requesting its rearrangement at this time.

Classification of Material

R. G. Benson, Chairman*

A survey of the degree of adherence to the division's standard material classification was based on returns from approximately 110 railroads operating 266,301 miles of lines, representing approximately 90 per cent of the total mileage of member roads. The degree of adherence is as follows:

	1933 Per cent	1934 Per cent
Of roads reporting total observance	65.7	69.2
Of roads reporting partial observance	12.7	9.9
Of roads reporting non-observance	21.3	20.9
Of mileage reporting total observance	55.8	57.2
Of mileage reporting partial observance	9.1	24.6
Of mileage reporting non-observance	34.3	18.2

Changes in Classification

A paragraph was added to the classification in 1925, reading as follows:

The subdivision of classes is optional and may be changed or revised to meet the needs of the individual roads, but it is recommended that the primary classes be followed, except as changed by the association.

The removal of this note from the classification in 1930 had the effect of apparently authorizing the consolidation of primary classes, as desired by individual railroads, and tended to destroy the uniformity of the classification. The committee recommended that this note be restored in place of the present instructions.

In the proposed plan for regional reviewing boards for purchases, a uniform classification for the writing and sorting of purchasing orders became necessary, and it was decided to use the American Railway Association Standard Material Classification for this purpose. Since the subdivision of the primary classes on the various roads is uniform, the orders are being sorted by primary classes only.

The committee recommended that some action be taken jointly with the Railway Accounting Officers Association looking to the preparation of a Standard Material Classification, providing for the totals in the four general groups, namely: Maintenance of Way, Mechanical, Conducting Transportation, and General.

Adze and axe handles, pick handles and spike maul handles belong in Class 45-B and should be eliminated from Class 45-A, and the following new items should be classified as follows:

Item	Class
Evans auto loader and parts.....	20
Sand-blast sand	36-A
Journal-box lid pins.....	20
Electric flat iron.....	25-A
Tarvia	3
Wool fibre yarn.....	37
Reflectors for crossings.....	2-A
Buses and parts.....	26
Charts for wheel press	31
Charts for watchmen's clocks	36-A
Charts for power house	49
Welders and grinders—electric portable.....	9-C
Safety bars	17
Truck, hand-operated hydraulic and parts.....	36-A
Cases—mailing	36-A
Couplings—fire hose	45-A
Doors—metal coaches	24
Sash—metal coaches	24

The committee stressed the importance of full adherence to the A. R. A. Material Classification so far as the primary

classes are concerned. In the past, roads have made changes to suit their own convenience, which tend to destroy the uniformity of the classification.

Purchasing and Storekeeping for Highway Vehicles

R. C. Harris, Chairman*

Previous reports of this committee having outlined the fundamentals of purchasing and storekeeping for highway motor vehicles, the committee confined its activities during the year principally to ascertaining the experience of the motor bus operating companies.

The decision as to whether motor-bus material and railroad material should be consolidated and supervised by railroad officers must be made only after full consideration of the corporate relation of the motor-bus company with the railroad.

A comparatively small proportion of the material required in motor-bus repairs is interchangeable with railroad material. It is, however, highly desirable that actual purchases should be made under the direct authority and supervision of the purchasing department of the railroad, to obtain the benefit of volume purchases.

The classification of material for motor vehicles, adopted at the 1932 annual meeting of the division, has been found ample to meet the largest motor-bus operations. Most companies are using fewer classes than are recommended, because their operations are not yet sufficiently extensive to justify the use of all classes.

Service contracts on a mileage basis for tire replacement are almost universally in use by the larger companies, under which the tire companies dismount and remount the tires and make all tire repairs. Abused tires are paid for by the motor-bus company. The question as to whether a tire is abused should be settled by joint inspection.

The experience with the tire repairs indicates that retreading has not yet been made an entirely satisfactory practice. Regrooving has produced improved performance. The practices followed in making heavy repairs to engines and bodies vary with the size of the operation. The desirable method is to take over heavy repair work as fast as it can be proved that such repair can be made more cheaply by the bus companies than by outside companies. Highly specialized repairs are still made in many cases by outside companies.

Records show the average life of various parts in service on various types of equipment. Such records should be brought frequently to the attention of the mechanical department and compared with the expected life. When new equipment is placed in service, the record of renewed parts should be made the subject of constant examination to determine whether any parts are failing to give the expected life. Such records form the basis for settlement with the manufacturers. Without such data, claims for credit or replacement are weakened. Such evidence is also valuable in determining methods for improving the wearing qualities of the parts.

The practice of holding material at outlying points in the

* General Storekeeper, Pennsylvania.



Mechanical Handling of Supplies on the Big Four

* Classification Inspector, Erie.

material account is almost universal. Working stocks are rarely permitted. The difficulty of throwing proper safeguards around such stocks has retarded their use. The practice of charging out each item as applied should be followed except where it is possible to provide absolute protection against misuse of the material at outlying points.

Observance of Recommended Practices

P. L. Grammer, Chairman*

The committee made a complete review of the recommendations and practices of purchases and stores departments, as adopted from time to time by the division, and from these selected the more important ones and issued a questionnaire to determine the degree of observance of recommended practices. The returns cover 110 member roads with a total mileage of 266,301, while 68 member roads, mostly smaller lines, representing a total mileage of 29,714, did not reply. The tabulation, therefore, covers replies from 90 per cent of the total mileage of member roads. The summary of results is as follows:

	Per cent of roads reporting	Per cent of mileage reporting
Observance	68.4	66.5
Partial observance	12.8	20.6
Total	81.2	87.1
Non-observance	18.8	12.9

One of the most important series of recommendations appears under Standardization and Simplification of Stores Stocks, and the returns indicate that the importance of this subject is

* Assistant Purchasing Agent, Pennsylvania.

Replies to Questionnaire on the More Important Recommendations Made by Division VI

Year	Recommendation	Per Cent Observance to Total Reporting Roads			Per Cent Observance to Total Reporting Mileage		
		Observance	Partial Observance	Non-Observance	Observance	Partial Observance	Non-Observance
Various	Standard material classification in use.	69.2	9.9	20.9	57.2	24.6	18.2
1925	Unit piling in all phases	80.2	11.0	8.8	84.9	10.5	4.6
Various	Standard scrap classification	56.0	18.7	25.3	61.6	30.8	7.6
Various	Principles of reclamation	74.7	16.5	8.8	84.0	10.8	5.2
1931	Principles of scrap sales	74.7	16.5	8.8	75.8	22.2	2.0
1932	Revised terms of sale for scrap	56.0	25.3	18.7	59.7	33.9	6.4
	Furnish stock report	81.3	5.5	13.2	71.6	13.2	15.2
1921	Specifications for cross ties	72.5	6.6	20.9	59.8	16.3	23.9
1930	Alternate car lumber patterns	48.3	8.8	42.9	43.8	20.4	35.8
1930		35.2	3.3	61.5	40.6	9.1	50.3
1931	*Simplified invoice form	56.0	7.7	36.3	72.4	11.5	16.1
1932	Requisition — order method	39.6	6.6	53.8	32.5	13.9	53.6
1932	Blanket release order	30.8	9.9	59.3	31.1	17.2	51.7
1931	Standardization of paper	51.6	5.5	42.9	56.1	10.1	33.8
1931	Standardization of forms	74.7	5.5	19.8	83.4	7.3	9.3
1926	Simplification sizes	83.5	14.3	2.2	80.1	19.0	.9
1926	Boiler lagging	83.5	13.2	3.3	68.0	30.0	2.0
1926	Carriage bolts, square head machine bolts, locomotive boiler and structural rivets, copper tubing	80.2	17.6	2.2	64.9	34.2	.9
1927	Lag screws, studs, stay-bolts, copper tubing, copper ferrules (limitation of sizes)	76.9	20.9	2.2	69.9	29.7	.4
1928	Reduction in sizes, steel tubing	80.2	15.4	4.4	75.0	22.4	2.6
1928	Reduction in sizes, common, merchants, mild steel or open hearth bars	79.1	15.4	5.5	71.9	25.7	2.4
1928	Reduction in sizes, light sheet steel and iron	81.3	15.4	3.3	73.6	25.2	1.2
1928	Reduction in sizes, cotton duck, wire brads, hose clamps (except tank hose), stove bolts, cotter keys and tool handles	78.0	19.8	2.2	71.0	28.6	.4
1928	Reduction in sizes, standard files	85.7	11.0	3.3	79.9	18.0	2.1
1929	Reduction in sizes, hack saw blades, hose of various kinds	74.7	23.1	2.2	66.3	33.3	.4
1929	Reduction in sizes, brushes, paint, etc.	83.5	13.2	3.3	74.9	24.5	.6
1929	Pipe fittings	76.9	16.5	6.6	67.6	25.6	6.8

Year	Recommendation	Per Cent Observance to Total Reporting Roads			Per Cent Observance to Total Reporting Mileage		
		Observance	Partial Observance	Non-Observance	Observance	Partial Observance	Non-Observance
1929	Reduction in sizes, sand paper and other abrasives	78.0	17.6	4.4	72.4	27.1	.5
1930	Reduction in sizes, high speed steel, flat	81.3	14.3	4.4	77.4	21.4	1.2
1930	Reduction in sizes, high speed steel, round and square; carbon steel, octagon; carbon tool steel, round and square; wood screws, flat head brass	79.1	15.4	5.5	74.8	24.0	1.2
1930	Reduction in sizes, wood screws, oval head brass, round head brass, flat head iron, round head iron	82.4	14.3	3.3	72.1	27.5	.4
1930	Reduction in sizes, machine screws, flat head brass and oval head brass	80.2	15.4	4.4	71.9	27.7	.4
1930	Reduction in sizes, machine screws, round head brass and flat head iron	78.0	16.5	5.5	70.5	29.0	.5
1930	Reduction in sizes, machine screws, filler head, iron and round head iron	79.1	15.4	5.5	71.3	28.2	.5
1932	Standardization of tin, galvanized iron and steelware	64.8	16.5	18.7	62.0	22.6	15.4
1932	Establishment of committees by the railroads participating in the terminals	41.8	4.4	53.8	61.3	11.3	27.4
1928	General plan of organization	74.7	12.1	13.2	73.0	18.7	8.3
	Supplies for dining cars, restaurants, hotels and commissaries bought by purchasing department	29.7	25.3	45.0	32.9	40.4	26.7
1932	Checking of weights of materials	90.1	4.4	5.5	88.7	9.3	2.0
1932	Methods for adoption of material standards	62.6	19.8	17.6	68.1	22.2	9.7
1933	Exchange of surplus material	73.6	13.2	13.2	85.1	11.3	3.6
	Is stock book record used?	81.3	3.3	15.4	82.5	6.7	10.8
	Is stock card record used?	26.4	2.2	71.4	22.7	7.3	70.0
	Is master stock book used?	41.8	1.1	57.1	60.1	6.4	33.5
TOTAL		68.4	12.8	18.8	66.5	20.6	12.9

* Later survey indicates 93.2 per cent of Class I mileage adhering and 6.3 per cent of Class I mileage not adhering.

generally realized. The only item in this group in which the degree of observance is somewhat low is standardization of tin, galvanized iron and steel ware, and this is probably due to the fact that the final report or recommendation on these commodities has not yet been submitted by the committee. While the returns as a whole indicate that the majority of member lines are making a real effort to carry out recommended practices, there is a substantial minority of non-observance.

Loading and Handling

J. S. Genter, Chairman*

The replies to a questionnaire indicate that capacity loading of company material in shipments from manufacturers is governed by requirements, price differentials and delivery terms. Little difficulty is experienced in securing capacity loading of coal, wheels, ties, piling, lumber, arch brick, lubricating and illuminating oils, stone cement, brake shoes, etc. Requirements may not warrant the purchases of other commodities in carload lots, but there are times when price differentials may be such that it will prove economical to purchase certain materials in excess of requirements over a fixed period, in order to obtain capacity loading. Careful study of the circumstances surrounding such purchases will determine whether or not such action is warranted.

Some of the western railroads are securing maximum loads when purchasing materials from eastern manufacturers by consolidating shipments from various concerns in the same district. This is accomplished by furnishing district freight agents with copies of purchase orders.

In the transfer of material on the line, it is both advantageous and desirable that all cars be loaded to capacity. The idea that this does not apply in these days when material requirements are

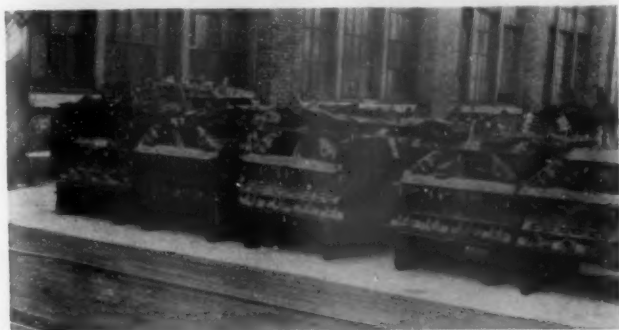
* General Storekeeper, Lehigh & New England.

not fully up to normal and some roads have surplus equipment, is erroneous. In the past, capacity loading was followed as a means of conserving cars. Operating expenses of railroads are based on gross ton-miles of freight handled, but operating income is based on net ton-mileage, which is the weight of the lading alone. Thus, it can be seen that the ratio of net ton-mileage to gross ton-mileage has an important bearing on the net earnings of a road, and these net earnings may be increased by double loading to two or more points in station order by changing sailing day plans where requirements over a fixed period do not otherwise permit capacity loading and, where smaller shipments are involved, by sending them to a freight station to be forwarded with merchandise freight.

Light-capacity cars, particularly those ordinarily undesirable for high-class revenue freight, should be used in the transfer of material on the line. It might also be well to use a single long flat car for shipping piling, telegraph poles, bridge timbers, structural steel, reinforcing rods, etc., instead of the customary two flat cars.

Consideration should be given to the class and kind of cars to be used in forwarding material so that it can be unloaded to the best advantage. Supervisors at loading points should have a thorough knowledge of conditions and facilities at the locations to which the cars are consigned. Where materials for several points are loaded in the same car, care should be exercised to load in such a manner as to enable forces at unloading points to unload their material without handling the material for other points.

In returning surplus and scrap material from roadway improvements, bridge repairs, etc., a saving can be effected by moving the pick-up cars from job to job until they are loaded to capacity rather than handling such surplus or scrap material



Grates Stored on Skids During Repairs to Locomotives

from each location in separate cars. In the distribution of cross ties and switch timber, it is more economical to load at the treating plant or storage yard in capacity loads and unload consecutively at the location desired for application. This can be accomplished by a prearranged delivery schedule for all points and should result in a considerable saving of cars over shipping in small lots as requisitions are received. Material of this nature can be handled successfully by supply train.

Forest Products

C. C. Warne, Chairman*

The subjects assigned to the committee for consideration were: (1) Buying lumber f.o.b. mill versus f.o.b. destination; (2) purchase of alternate lumber sections which have been issued by the Mechanical division of the A. R. A.; (3) determining whether or not standard specifications for lumber recently adopted by the Mechanical division of the A. R. A. are generally being used by the various railroads.

The committee, shortly after it had been appointed, started to consider these subjects and planned to hold the usual meetings, but the creation of the various N. R. A. codes, especially the Lumber code, demanded the attention of the members and, as these matters were considered of greater importance than the subjects assigned to the committee, they were given first consideration.

In connection with the first subject, it was decided to await accurate information, which was expected would be obtained from bids to be received by a member railroad in connection with the purchase of lumber for new cars. A review of the bids showed that the Lumber Code weights were more than the actual weight of the lumber and that by buying the lumber

f.o.b. mill the lower delivered price would be obtained by the buyer. Other members of the committee have reported similar experiences and it is, therefore, recommended that lumber be purchased f.o.b. mill except in cases where freight equalizations are made on delivered prices.

As to alternate lumber sections, no information has been developed, except that it was learned that some roads are buying car siding $\frac{25}{32}$ in. thick because the Lumber Code prices show a difference of \$3 between the price of siding of this thickness and the standard car-siding pattern, which is $\frac{13}{16}$ in. thick. Car siding $\frac{25}{32}$ in. thick has not been approved as a standard by the Mechanical division of the A. R. A. and the roads that bought the thinner car siding did so because of the lower price.

It was decided to take no action on specifications because of the general questionnaire which had been sent out by the division to all roads on the subject of adherence to standards.

Simplification and Standardization

A. G. Follett, Chairman*

The railroads have been pioneers in the standardization of design and quality of materials and supplies which they purchase or manufacture. The value of standardization is well known to the officers of these railroads. The aim of the committee is to enunciate a complete and thorough method of simplification and standardization of materials and supplies, by means of which all roads may derive increased benefits in reduced inventories and overhead expenses, in quicker turnover, in more efficient purchases and stores service, and in a market condition that will be beneficial alike to the railroads and to the vendors of material.

It is, therefore, recommended that each individual road organize a Simplification and Standardization Committee: (1) to reduce the number of varieties and sizes of materials used; (2) to provide disposition for inactive and obsolete material, both new and used; (3) to promote adherence to standards promulgated by recognized standardization bodies of national scope; (4) to guard against second-hand and other materials being returned to stock at fictitious values or in quantities in excess of future requirements, and (5) to study conditions that may foster obsolescence or surplus.

Organization and Procedure

The committee should be appointed by the executive head of the railroad. Members should represent the departments interested. Sub-committees may be appointed to develop technical and other information for the use of the simplification committee. The chairman should be the executive officer directly in charge of the purchasing and stores departments. Each member should have authority to cast a definite vote on matters concerning his department and to carry out, within his department, the recommendations of the committee. The chairman should call meetings and invite those members who, in his judgment, are interested in the materials to be discussed. The executive head of the company should make it mandatory for each member so invited to attend. Any member of the committee may ask any assistants that he may deem necessary to attend the meeting with him. The committee should review each class of material periodically or at the discretion of the chairman. Minutes in detail should be kept of each meeting and copies should be furnished each member of the committee and others interested. The minutes should show the action taken by the committee in sufficient detail that the recommendations may be intelligently complied with throughout the departments concerned. The chairman of the committee should keep informed as to standards adopted by the divisions of the American Railway Association, by standardization bodies in the U. S. Department of Commerce, and by other national standardization bodies. He should keep in touch with the Section of Purchases of the Federal Co-ordinator of Transportation. Important results in simplification obtained by these individual committees should be reported to the secretary of Division VI for the information of other railroads or for the consideration of the proper committee. Suggestions of the committees for needed revision of A.R.A. Simplified material lists should be handled in the same way.

Experience has shown that committees of this character whose members do not have final authority in the disposition of materials have failed to accomplish maximum results. The member representing the purchasing and stores departments should be appointed chairman for the reason that he will have the means of determining the relative activity of all items in the master stock list, which is the basis of simplification. He will

* Purchasing Agent, New York Central.

* General Material Supervisor, Pennsylvania.

also be in close touch with purchase costs, which is of great importance in the study of both simplification and standardization.

There should be available a master stock list containing all commonly used items of material, with complete description and identifying number. There should be a master stock record or other means of determining the relative activity of the various items of material in the master stock list. Information of this character is absolutely essential as a basis for simplification.

Obsolete and Surplus Material

Obsolete material should be listed. Surplus material should be listed to the general storekeeper or concentrated at a central store. All requisitions for similar materials should be checked against the surplus. Obsolete and surplus materials should be studied with a view of their substitution for more active material. They should also be studied as to the practicability of conversion to more active items by modification. Attempts should be made to sell in the market or exchange with other railroads. The final step is to scrap and charge the service loss to expenses rather than hold in the inventory at fictitious value.

Prevention of Obsolescence

Simplification and standardization will accomplish much in the prevention of obsolescence and surplus. When standards are changed, the existing stock of items made obsolete should, if practicable, be used before acquiring stock of the new standard, or immediate steps should be taken for proper disposition. Materials for new work should not be ordered in advance of the authorization of the project or in advance of the preparation of plans or drawings, as this is likely to result in obtaining material which can not be used. New work should be policed to see that left-over material is returned to stock promptly to avoid the purchase of new material. Care should be taken, however, to see that it is not returned at fictitious values. When equipment is gradually being retired, every effort should be made to secure material for repairs from the equipment being dismantled. Such repair parts should not be stocked at their customary value until there is assurance that they will be required for use, nor should they be stocked in excessive quantities. When roadway or shop facilities are retired, standard usable or repairable material should be forwarded to the proper stores point, but care should be exercised to see that it is not stocked in excessive quantities or at fictitious values.

Standards Information

As standards are changed, revised drawings and specifications should be issued to those responsible for the use of the materials which they cover. Corrections of stock records and stock lists should be issued currently. Items should be added to the stock list only upon proper authority. Standard stock lists should be placed in the hands of all persons responsible for the design of equipment and facilities, with instructions to use existing standard parts in the make-up of designs, so far as practicable. Duplicate standards as between departments should be avoided. Suggestions from employees toward simplification and standardization should be encouraged and utilized.

Standardization of Nuts

Hexagon and square nuts have been standardized as "Light," "Regular" and "Heavy."—American Standards Association B18-2-1933. Any nuts ordered that are not in accordance with these three standards will be subject to a price extra. Unless otherwise specified, carriage and machine bolts will be furnished with the "regular" nut. Attention is called to the economy of confining purchases to these standards and of abstaining from purchasing the "Heavy" nut except for actual requirements. This material is furnished in bulk or in standard package quantities, and price extras apply on packaged nuts other than in standard packages.

Railroad Lanterns

The committee has considered the simplifying of railroad lanterns to provide interchangeability of globes and burners. Such simplification is desirable from both a purchasing and a stores standpoint, but the features that prevent interchangeability are complicated by patents to such an extent that simplification seems impracticable at present. In some cases oil founts complete with burners are interchangeable between different makes of lanterns but burners are not interchangeable between different makes of founts. In such cases it is economical to stock founts complete with burners rather than founts only. In order to keep down the stock of repair parts, some railroads confine the purchase of lanterns to a single manufacturer's product. Other railroads allocate certain types of lanterns to given territories. While these practices are helpful, the only

real solution of the problem is simplification by the manufacturers so as to obtain interchangeability of detachable parts.

Motor Car Parts

In order to obtain interchangeability of motor car wheels, the American Railway Engineering Association in 1930 designed a standard wheel fit for wheels and axles, and a standard contour for wheel tread. While new motor cars will be equipped in accordance with this standard, there will be, for many years, a great number of cars in service with old type axles on which wheels are not interchangeable. Therefore, all orders for new axles should specify the A.R.E.A. standard wheel fit, and new wheels should be purchased to fit the axles. The A.R.E.A. design does not provide interchangeability of axles between different kinds of cars. To overcome this difficulty, some railroads are making their own axles.

Contact With A.R.E.A.

In accordance with the policy adopted by the division, the chairman attended meetings of the A.R.E.A. Standardization committee, the Rail committee, and the Track committee. At the meeting of the Track committee the Tool Manual was revised and brought up to date and was accepted at the annual meeting in March, 1934. These standards should be followed.

With reference to tie plates, the need for a reduction in the number of designs was emphasized and the report provided for



Supplying Parts for Motor Buses is a New Problem for Railway Stores Forces

47 patterns with foot notes permitting other variations where the present practice of a railroad is at variance with the basic standard, so that the total number of variations would be approximately multiplied by three. The association referred the report back to the Track committee for further consideration.

Co-operation with Mechanical Division

The committee has been represented at meetings of committees on Locomotive Construction and on Car Construction. At the meeting of the committee on Locomotive Construction there was a discussion of communications from two valve manufacturers protesting against the standardization of 300 lb. pressure globe and angle valves adopted by the Mechanical Division in 1932. The result of the discussion was unanimous support of the standards as adopted. These standards insure interchangeability of the complete valves and provide maximum interchangeability of the component parts. The valve seats are renewable, permitting regrinding without removing a valve from the line. These features will reduce the cost of repairs to locomotives and to valves. They will also permit reduced stocks of valves and repair parts and will largely eliminate obsolescence.

Specifications for Iron and Steel

The committee suggests calling the attention of Division V to the desirability of revising A.R.A. Specifications for iron and steel to conform to Manufacturers' standard practice under the Code of Fair Competition of the Iron and Steel Industry to avoid paying special extras. A check reveals that such modifications can be made without seriously affecting the quality. Steel ordered under the A.R.A. specification covering Structural

Steel Shapes, or Plates and Bars under the Code can be billed at base price if the following modifications are made to permit check analysis being made in accordance with procedure No. 1 of the A.A.S.M.T.C. Committee, to permit 0.008 in. variation over or under in dimensions of rounds, squares, hexagons or octagons up to and including 1 in and to waive check analysis and physical test on hot rolled strips.

Scoop shovels are being purchased in accordance with various designs and specifications. Economy would result from purchase by all roads in accordance with a common design and specification. There is no A.R.A. standard.

Compliance with these specifications of the Mechanical division in railroad purchases would result in much elimination of waste from the manufacturer's standpoint and would tend toward lower prices. It would result in smaller inventories, less storage space and quicker delivery. Purchasing agents whose using departments do not conform to these standards should determine whether better purchasing conditions would result from adherence to A.R.A. specifications, and then present the facts to their using department officers.

Some railroads are purchasing extra strong pipe for locomotive use with plain ends and without couplings. Since considerable cutting and threading of pipe is necessary in its application to locomotives, and since most of the connections are made with fittings other than couplings, an appreciable saving has resulted.

One railroad, by simplifying dining car carpet, binding and fringe, and curtain pantosote, reduced 61 items to 4.

A questionnaire was sent to 41 Class I railroads, representing 224,378 miles of road, requesting lists showing their sizes of copper flue ferrules, copper tubing, hack saw blades, brass and iron machine screws. Replies were received from 35 railroads, representing 191,290 miles of road. With ferrules and copper tubing, there are a great number of sizes and thicknesses and considerable confusion of gages. In standard commercial practice gage number diameters of machine screws stop with No. 12, and fractional diameters begin with $\frac{3}{4}$ in. The lists show how the two systems overlap in present railroad practice. No sizes not conforming to standard practice have been recommended by this committee. The questionnaire developed that some roads are using stove bolts, for some purposes, in place of machine screws. The present price of stove bolts is less than that of machine screws.

The committee made recommendations in 1932 for the standardization of tin ware, but criticisms were received from the manufacturers of sheet ware, as well as some suggestions from railroads, in view of which it seemed advisable to reconsider the long spout valve oiler, one-half pint squirt oiler, one gallon, two gallon and five gallon carriers, the hand torch and the tallow pot. The manufacturers of this ware were invited to attend the first committee meeting in an effort to develop standards, and it was agreed that the manufacturers should prepare designs to which all the manufacturers could conform. These designs were submitted and, with some changes, were accepted.

The machinery and methods used by different manufacturers vary considerably, and for them to produce utensils exactly identical in shape and dimension would involve considerable expense in changing manufacturing facilities, which must eventually be borne by the users of the product. The committee has, therefore, permitted the manufacturers certain optional features and tolerances which will enable all of them to produce utensils that will comply with the recommended designs, without prohibitive changes in their plants. In present practice this ware is not used for measuring. It has been the experience of those who have used the steel ware that economical repairs will be confined to handles, bucket cars, etc. Therefore, exact identity is not an important feature except where so specified. Railroads will be enabled, by this standardization, to purchase competitively from any of the manufacturers on a basis of price, quality and delivery.

Contest Winners Read Papers

For several years, the division has conducted an annual competition among members of railway purchasing and stores departments for papers on the problems, work and accomplishments of railway supply organizations, and the division. As a result of this year's competition, honors for the best two papers were awarded equally to E. J. Dennedy, stock clerk to the division storekeeper, Baltimore & Ohio, Ivorydale, Ohio, and J. R. Stokes, stores foreman, Illinois Central, Memphis, Tenn., both of whom were winners in former competitions, while papers by R. K. Hess, clerk, office of general storekeeper, Pennsylvania, Philadelphia, Pa., Thomas Doole, requisition marker, office of purchasing

agent, Pennsylvania, Philadelphia, and W. J. Schrecongost, section stockman, Baltimore & Ohio, Punxsutawney, Pa., were awarded honorable mention. The winning papers, which were read by their authors before the General Committee meeting, are reproduced in part as follows:

Progress Means Change

By Emmet J. Dennedy

Whether the railroads are preserved as a private business enterprise depends largely upon the resourcefulness and efficiency of management within the next few years. The railroads jointly form a single transportation system. But the Federal Co-ordinator has said: "The single system is still made up of a large number of parts which are separately owned and managed, and there is no effective centralization of authority over many matters of common interest." It is necessary "to form a more perfect union." It will mean changing certain of our methods and practices.

Better regulation and control of inventories in recent years have led to a general reduction in material, storage space and capital invested in supplies. Materials and supplies on hand were reduced from \$682,725,812 in 1923, to \$470,072,929 in 1929, a reduction of \$212,652,883 despite the fact that a greater amount of traffic was moved during 1929. The biggest problem confronting the supply department is that of continuing this improvement.

Probably the greatest reduction in inventories can be obtained by planning and scheduling of materials from the preparation of purchase requisitions until actual delivery to the user is made. The automotive industry has shown what can be done along these lines, as it is not unusual to find some of these companies maintaining no stores of raw materials, merely considering material as being in process of manufacture immediately upon arrival in the plant. The Packard Motor Car Company, in the last few years, reduced its inventory to one-quarter of the figure formerly maintained, and, at the same time, tripled its production. Its inventory is now but one-twelfth of what it would have been necessary to carry if production planning and control had not been improved.

The Ford Company's turnover, owing to its pace setting mechanisms and control of material, approximates the figure of 50 turns per year. In other words, it requires about four days to convert iron ore into a Ford auto ready for sale. Iron ore was smelted in the blast furnaces, moulded into pigs, put through the cupola and foundry, machined and sent to its final place in the finished product on the assembly line in 30 hr. Only a few years ago, 14 days was a record.

The purchase, maintenance and distribution of material stocks on the railroads are far more intricate and involved in detail than in ordinary manufacture. However, there is still too much money tied up in materials and supplies on railroads and some means must be found for reducing stocks.

The object of budgetary control is to secure the effective use of the railroad's capital resources. The materials budget applied to purchasing will assist in accomplishing that end. It is one instrument which will enable supply departments to plan and schedule materials more scientifically, thereby reducing the stock balance and thus releasing capital for other purposes. Maintenance and material budgets have been tested on some railroads and found economically practical.

Storehouse Practices for Economy

By J. R. Stokes

Economy has long been a familiar word on the railroads, but its real meaning has been emphasized in many new ways during the past four years. The results to be obtained are unlimited, provided every member of the supply organization could be induced to make economy a habit.

Pricing Methods

Pricing of materials upon receipt has proved successful. On the Illinois Central, transfer invoices from other stores are priced at the time that the materials are loaded for shipment. Posting prices on bin labels when the materials are checked and stored is a simple procedure. Exposed materials are marked or stencilled to preserve the original figure. The prices are entered in the monthly column of stock books from bin labels

or other pricing indexes and the stockkeeper handles the pricing along with his other duties.

Where materials are received from manufacturers, a priced shipping notice is received and freight bills covering the charges are delivered by the agent or express company, while postal charges are included on shipping notices which are copies of the regular invoice. The separation of charges as between system and foreign line can be computed readily after the pricing system has been in use a short time. The inspection, tax and other fixed charges can also be added to the basic price. Fluctuations in prices can be taken care of immediately as bin labels are posted with prices prior to issuance of the materials. Materials not stored in bins or stalls can be marked for identification when received, and priced as unloaded from cars.

Marking Materials

Marking special materials for identification is the most effective means of preventing dead stock. On the Illinois Central slow moving is identified immediately. A tag showing the proper description, requisition number, date received, equipment or purpose for which ordered, and authority for the preparing of the requisition, encourages the department responsible for the material to assist in disposing of it. The tagging of materials is followed up after a reasonable period of time with a letter to the proper officer, and a report to the general officer.

A fibre weather-proof tag and laundry ink for printing are best adapted for exposed material, while a good grade of cardboard tag and wax pencil or ink are sufficient for inside use. When materials in the storehouse have a smooth surface, pasters are satisfactory. Identification of reels and returnable containers is important, and the use of appropriate markings, in addition to records, are safeguards to the proper return for credit from the manufacturer. The stencilling of drums to show the contents and date received also assists in determining the oldest stock on hand.

Attention to the condition of handling equipment prevents accidents. The inspection of freight cars prior to unloading to detect holes in floors, nails, etc., is also an economy measure. The proper loading of cars and storing of materials will go far to prevent damage and subsequent losses.

The training of all employees regarding the storing and handling of combustible items of material and the daily inspection of storehouses and yards to eliminate fire hazards are essential. Vapor-proof globes and proper electric switches should be installed, as well as standard fire-proof storage facilities to accommodate inflammable materials. The correct type of extinguisher for various conditions, and clean and orderly premises, are also of great assistance to adequate fire protection.

Revised Rail Pension Bill Reaches Debate Stage in Senate

(Continued from page 874)

to say, therefore, that the rates of retirement used in constructing these estimates are in any way excessive.

Separate calculations have been made for the several occupation groups, and in each age within the occupation group to determine the total amounts of the annuities to be granted, and the survivorship of annuitants from year to year in order to construct an estimate of possible expenditures under the pro-

Annuity Payments to Employees Retired Under the Bill Plus All Age Retirements Under Voluntary Systems If Brought Under Bill

		Payroll of \$1,750,000,000		Payroll of \$2,000,000,000	
		Percentage Payable by		Percentage Payable by	
		Carrier	Employees	Carrier	Employees
1935	\$156,100,000	5.95	2.97	5.20	2.60
1936	164,500,000	6.27	3.13	5.49	2.74
1937	177,900,000	6.78	3.39	5.94	2.97
1938	190,200,000	7.25	3.62	6.34	3.17

Annuity Payments to Employees Retired Under the Bill Plus Payments To Employees Retired Under Voluntary Systems At Age 70 or Over

		Payroll of \$1,750,000,000		Payroll of \$2,000,000,000	
		Percentage Payable by		Percentage Payable by	
		Carrier	Employees	Carrier	Employees
1935	\$131,000,000	5.00	2.50	4.37	2.18
1936	139,750,000	5.33	2.66	4.66	2.33
1937	153,500,000	5.85	2.92	5.12	2.56
1938	166,300,000	6.34	3.17	5.54	2.77

posed bill. The totals for the years 1935 to 1938 inclusive are as follows:

1935	\$91,000,000
1936	103,000,000
1937	120,000,000
1938	136,000,000

Taking all factors involved into account, it seems probable that these are minimum estimates.

Section 6 of the proposed bill provides that the board may substitute the provisions of the act for existing age retirement systems of railroads, or in lieu of such substitution may direct payments to be made, in accordance with the formulae set forth in the bill, to all persons retired from rail service at or after reaching age 70. Questions have already been raised as to the meaning of the language of Section 6 but the intent seems clear that the board is either to take over existing railroad pension systems in toto, exclusive perhaps, of a few disability retirements made under age 65, or else is to make payments to all persons retired at age 70 or over. Calculations of cost on both bases have been made.

Communications . . .

Question on the Steel Code

TO THE EDITOR:

The Code of Fair Competition for the iron and steel industry lists as an unfair practice "making or giving to any purchaser of any product any guaranty or protection in any form against decline in the market price of such product."

Railroad purchasing agents, as a whole, are interested in knowing why this should be considered as "unfair practice." Will the steel manufacturers answer this question through the medium of your columns.

RAILROAD OFFICER.

Long Non-Stop Runs

NEW YORK.

TO THE EDITOR:

The Royal Scot, of the London, Midland & Scottish Railway, has, as you say in today's *Railway Age*, made 401 miles without a stop; and that is a fine record for a steam locomotive which is obliged to use perhaps 20,000 gallons of water on a journey of that length; but it is not the longest run with which the recent performance of the Burlington is to be compared. The longest non-stop run (until now) was made in Argentina in July, 1929, as reported in the *Railway Age* on September 14 of that year, page 660. This was an experimental run over the Buenos Aires Great Southern, from Buenos Aires to Cipalatti, 775 miles. It was made in 20 hr. 37 min. or at an average rate of 37½ miles an hour. The locomotive, like that of the Burlington, was a Diesel-electric, but it was designed for a maximum speed of 47 miles an hour. The weight of oil consumed was 2,174 pounds.

B. B. A.

In Which It Appears That We Approve Boneheaded Hogs

WARRENVILLE, ILL.

TO THE EDITOR:

The I.C.I. editorial which appeared in the *Railway Age* of April 7:

I offer sharp dissent from the suggestion that the railroads are not blamable for the present situation.

Passing over the questions of onerous packing requirements and slow, indifferent service, let us consider the question of rates. There was once a 25-cent minimum, which was raised to 40 cents and then to 50 cents. In parallel as to time the minimum (constructive) weight was raised to 100 lb., so that if the shipment took a 60-cent rate, one pound would cost 60 cents rather than the 50-cent minimum.

It may well be that there have been some flashes of sanity

and that these rates have been somewhat lowered or eased. To a not uninformed but more or less detached observer, the whole procedure looked like an effort to drive the traffic to the express companies. Roughly phrased: "We have a monopoly of carriage; we will get more for this shipment if it moves by express, therefore let us drive it there!"

It is possible the 25-cent minimum was too low, but the combination of 50 cents and 100 lb. was plain hoggishness.

One says "possible," because there has never been any effort to relate rates to costs. Rather the slogan has been "What the traffic will bear"—otherwise "What we think we can get away with." This went so far that cost accounting is now practically impossible, quite outside the difficulties of equating certain costs to different classes of service.

And can you recall any vociferous consumer demand for cars of 25 tons light weight?

Referring to costs, let me slip over into passenger traffic and make a point I dare say you never thought of. Certainly this point leaves the ordinary passenger man dazed! It is that the passenger comes to the door of a Pullman with one seat paid for; that what he is buying is one extra space. The monopolist had so far lost sight of this that it was recently seriously proposed to penalize the Pullman customers, who fully utilized the space, by soaking them again. They bought two seats, when they bought two rides, they paid for one additional space in the Pullman and the idea was advanced if they used fully the additional space already twice paid for, they must pay again! I do not overlook towels, linen, etc., in the Pullman, merely dismiss them as negligible frills compared with capital and current cost of the rolling space which is the real merchandise.

And observe the present belated and half-hearted recessions from the silly experiment of 3.6. Because I always use Pullman or parlor when it is available I am to be discriminated against. The practice varies, but in some cases I must pay three cents per mile for my additional space; whereas he who uses the seat I think not good enough, gets it for two cents. Soak your best customer?

Snap out of it! Being pro-railroad is your job, but it is possible to be pro-railroad without declaring railroad hoggishness is a golden calf to which all must bend the knee.

By the way I consider myself pro-railroad! That's where my money is. I think of the railroad as circumscribed in its usefulness and its profit by boneheaded hoggishness, manifested in high rates and indifferent service. I would have it a settled rail policy for the future to supply good service at rates bearing some relation to costs (competitive or otherwise) and abandon the old theory that the important function of a railroad was the manufacture of securities. With emphasis on this last until the ratio of fixed charge obligations approached sanity.

E. M. MOORE.

There's Drama in Railroads— Why Not Dramatize Them by Radio?

DEATH VALLEY JUNCTION, CAL.

TO THE EDITOR:

The *Railway Age* of June 3, 1933, contained a communication over the name of the undersigned, suggesting a reproduction of the motion picture "Union Pacific Trail," or others, symbolizing the construction and development of our railroads; the climax to be the streamline trains now being introduced by the Union Pacific and Burlington. "The Union Pacific Trail," "The Iron Horse" and "The Iron Trail" were presented in silent pictures. They were popular and profitable and would now be more so with sound effects.

Also, many people still refer with keen interest to the radio program of the Great Northern in 1929, coincident with the construction of the electrified Cascade tunnel and inauguration of service of the "Empire Builder." The dramatic and historic aspects of these recitals made a vivid impression upon the public memory.

The "20 Mule Team Borax" corporation and its subsidiary, the Tonopah & Tidewater Railroad, are associated in the radio broadcasting of historic phases of the development of borax deposits and the construction of the railroad in the Death Valley region. These historic weekly recitals prepared by W. W.

Cahill, superintendent of the railroad, have been commanding marked attention throughout the country, as did the program of the Great Northern in 1929.

Perhaps it would be a profitable venture if a group of major railroads were to co-operate during the next Winter season, previous to renewal of Congressional debate of transportation problems, in a series of radio broadcasts relating to the dramatic history and accomplishments of the railroads. Any railroad desiring might participate; also the Railway Express Agency. Each could broadcast in sequence weekly. Perhaps the American Railway Association could act as a medium for development and rendition of the series. The dramatic and historic incidents in the development of the railroads could be related by monologue with tribute to the notable men who constructed and developed them.

Construction penetrating the wilderness following the Revolutionary war; evolution of primitive equipment; early surveys of a colonial colonel named George Washington through the region of the present Baltimore & Ohio and Chesapeake & Ohio; Peter Cooper; General Braddock's ill-fated venture; Harper's Ferry and John Brown, and his captor Colonel Robert E. Lee; the early Mohawk & Hudson and New York & Harlem; George William Featherstonhaugh, Vanderbilt, Gould, Astor; the development of the Pennsylvania; Thompson, Scott and Cassatt. The operation of the federal and confederate armies along the Richmond, Fredericksburg & Potomac; the first United States mail car on the Burlington; Fred Harvey, Sr., one of the first mail clerks; the Burlington "Fast Mail"; the pioneer battle between the Santa Fe and Denver & Rio Grande for right-of-way through the canyon of the Arkansas and the Royal Gorge, and the winner, General William Jackson Palmer. The Union Pacific; Abraham Lincoln, General Grenville M. Dodge, John Stevens Casement; the Cheyennes and Arapahoes, and other Union Pacific drama. The Central Pacific, Huntington, Stanford, Crocker, Hopkins, Judah and the Chinese laborers; the golden spike at Promontory Point, Utah; the later development of the Union Pacific-Southern Pacific by Edward H. Harriman.

The Northern Pacific and Great Northern colorful history; pioneer days of St. Paul and Bismarck; the Mandan, Crow, Blackfoot and Sioux; Fort Keogh; Generals Miles and Terry, Chief Red Cloud, Calamity Jane and Liver Eating Johnson; the pioneer towns of Glendive and Billings; Custer's Last Stand with the 7th U. S. Cavalry on the Little Big Horn river 50 miles south of the Northern Pacific in Montana, June 25, 1876. Villard and Hill and the development of the Northwest Empire; the Inland Empire and Puget Sound region.

The old Santa Fe trail; Cortez, Geronimo and his Apaches; the Navajos and Hopi; General John C. Fremont, Kit Carson, Cyrus K. Holliday; historic old Santa Fe, the palace of the governors and General Lew Wallace, the first American governor; Dodge City; its construction days and its stacks of buffalo hides; the later steel trail of the Santa Fe; the record special train of Walter Scott ("Death Valley Scotty"), Los Angeles to Chicago, July 9, 1905, in 44 hours and 54 minutes, with the high speed of 106.1 miles per hour between Cameron and Surrey, Mo.; and "The Chief Is Still The Chief"; its premier train.

The Railway Express Agency; pioneer development, recalling Herndon, Wells and Fargo; the incredible first relay pony ride of the noted frontiersman, F. X. Aubrey, Santa Fe to Independence, 780 miles in 5½ days via the Cimmaron trail; the Overland Pony Express between St. Joseph and Sacramento; the record ride of Wm. F. (Buffalo Bill) Cody; the inimitable Jack Slade of Julesburg; "Wild Bill" Hickock, who knew how to enforce the law, and other frontier color.

The Butterfield mail and express Concord stage coaches in the Southwestern region, John Butterfield and Ben Holladay; the Comanches and Apaches; El Paso Del Norte and the country of the Rio Grande. Stein's and Dragoon passes and Fort Yuma, California; historic, colorful and magnetic. All of this in the region of the early surveys of the present Texas & Pacific and Southern Pacific Lines.

After thorough preparation why not draw aside the curtain of history and portray the colorful drama of the construction days and later scientific development of our railroads, the greatest of American industrial achievements, and without which the development of our social and economic life would have been physically impossible?

EDWIN SWERGAL.

Odds and Ends . . .

Navy to Man Rails

The above headline, which appeared in many newspapers recently, is not, as might be supposed, a new phase of governmental activity in regard to the railroads. It is intended to convey the fact that, as is customary at presidential navy reviews, the crews will man the ships' rails.

Ladies! Ladies!

One would expect that freight personally solicited by railway employees of the fair sex would consist only of refined merchandise. Still, on one day recently, Margaret Leahy secured routing of two cars of tobacco, while Edna Markowski came through with routing orders for a carload of keg beer. The St. Louis-San Francisco was the beneficiary.

Railroad Stamps

Robert White, section foreman of the Grand Trunk Western at Drayton Plains, Mich., in addition to being a photographer who has won many prizes, also has a most interesting collection of postage stamps. As a railroader, he specializes in the stamps of the world that show something pertaining to railways. The first of such stamps was issued by the province of New Brunswick in 1860, showing a 4-4-0 locomotive then in use on the European & North American R. R. The most recent stamps of this sort were issued in Egypt in 1933 and show locomotives in four stages of progress. According to Mr. White, practically every department of railroading is represented in the total of about 200 stamps of this character issued by more than 20 countries. The first United States stamp of this description was a three-cent blue one showing a locomotive and issued in 1869. The first commemorative stamp ever issued, 1776-1876, shows the transition from the pony express to the railroad in the handling of mail.

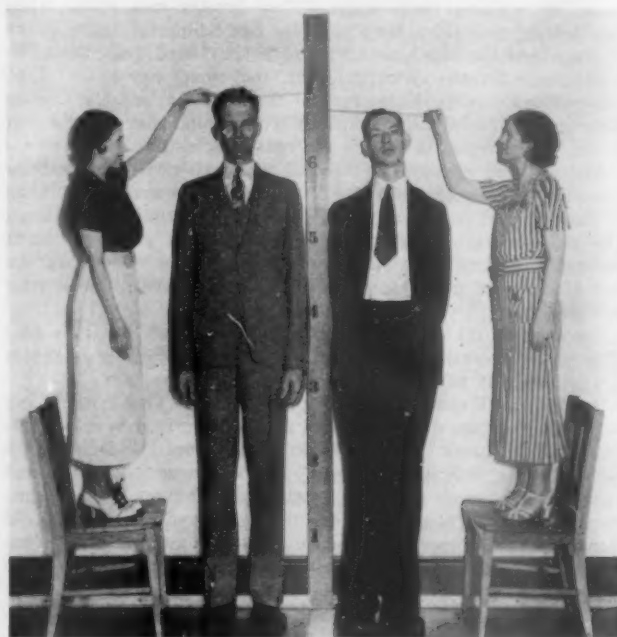
The Zephyr

The Burlington's new streamlined train, "The Zephyr," owes its name to a line from Chaucer, according to June Provines in the Chicago Tribune. "More surprising," she continues, "than finding the new train named after the breeze of spring weather, as lyricized by Chaucer, was discovering a railroad president who could quote the early English poet. Finding ourselves seated next to Mr. Ralph Budd, president of the Burlington, at a dinner party the other night, we started conversation by inquiring how the new train happened to be named the Zephyr. And believe it or not, this hard-headed and successful railroad man, this American engineer with 35 years of experience, not only explained but quoted, unhesitatingly, the beginning of Chaucer's prologue. When the name Zephyr was suggested, it struck the railroad heads immediately as an appropriate name for a granger road like the Burlington, whose business depends so largely upon the products of agriculture, Mr. Budd explained. Thus the train was named after the God of the West Wind, the light propitious wind that was the harbinger of spring. And like Zephyrus, the new train glides along without apparent effort, its silvery shape like a ray of sunlight. We again—if you please, are quoting Railroad President Budd."

Tallest Railroader Question Settled?

Unwinding himself from a Pullman berth, Emerson G. Martin, Chesapeake & Ohio electrician, got off a train at Roanoke, Va., yesterday morning, walked over to the Norfolk & Western general offices, took off his shoes, squared his shoulders against a wall, was officially measured, and started back to his home in Russell, Ky., last night—a United States champion—the tallest railroad man in the country. Standing in his stocking feet, his 215-lb. muscular body towered 6 ft. 10½ in. toward the ceiling and topped his challenger, Fred Butterworth, N. & W. car service employee, by 2¼ in. "Well," said the 31-year-old Martin, looking down consolingly upon his 6 ft. 8¾ in. erstwhile rival, "at that I am not what I used to be—at least not by an inch."

To incredulous spectators he casually explained that at 16 he measured 6 ft. 11½ in., "and I can show you today the mark on the kitchen wall at my dad's home." Mr. Butterworth, who is 26, weighs 180 lb. and has been top man for so long, was disappointed—"First time I have looked up to any one in years," he said. The C. & O. employee has a good appetite, a well-proportioned physique, an infectious smile and is not at all self-conscious. In fact, he declared, there are many advantages in being a very tall man. Some of them he set forth; there has never been such a thing in his life as tip-toeing, neck craning and so on; it is cooler in a higher altitude; and the ladies (he freely admitted he was right much of a ladies' man) "always look at me." Still, the champion confessed, there are some disadvantages. For instance, he has to have all of his clothes—suits, shirts, underwear, socks, gloves, etc.—made to order. He can buy his hats—size 7½—from stock. He wears a size 14-C shoe. Mr. Martin is a basket ball player and what a player! He revealed that at the age of 11 he had attained a height of 5 ft. 6 in. But the real spurt came during the next two



The Long Boys Get Together

years, when he grew 14 in. His father and mother are each about 5 ft. 8 in. tall. He has five sisters and three brothers, ranging in height from 5 ft. 5 in. to 6 ft. 3 in.—the youngest members of the family are the tallest and the oldest are the shortest. He is married to a wife 5 ft. 7 in. tall and has a 21-month-old daughter, who last year won the blue ribbon as the most perfect baby in a contest with 345 other youngsters. Martin used to be in vaudeville and circuses before he joined the C. & O. force seven years ago and he knows something about other tall men of the country. He feels, therefore, that his claim to the title as tallest railroader is good. He is willing, however, to peel off his shoes at any time and match altitude with any contestant who comes along.

Sea-Going Cooking School

The S. S. Sandy Hook of the Central Railroad of New Jersey, which operates between New York and Atlantic Highlands to North Jersey shore resorts, will be supplied on certain occasions this season with chefs from prominent hotels, women cooking experts and actual culinary demonstrations. The ship's ballroom will be turned into a veritable kitchen and thus housewives may combine business with pleasure and keep their hand in while sailing over such bounding waves as are afforded in New York harbor.

NEWS

I. C. C. to Investigate Fares and Surcharges

Failure of Eastern roads to agree on cut is understood to be one reason for inquiry

Because the various experiments with reduced passenger fares undertaken by the railroads have resulted in a considerable difference in the levels of fares in the several rate territories, in addition to increasing the spread in some territories between fares in parlor and sleeping cars and those good only in coaches, the Interstate Commerce Commission has ordered an investigation into the passenger fares and surcharges maintained by all common carriers by railroad subject to the interstate commerce act, "for the purpose of determining whether any of such fares or surcharges are or will be unreasonable, unjustly discriminatory, unduly prejudicial or preferential, or otherwise in violation of any of the provisions of the interstate commerce act, and what fares and charges, or what maximum or minimum or maximum and minimum fares and charges shall be prescribed to be charged in order to remove such unlawfulness, if any, as may be found to exist."

A preamble to the order states that the levels of fares in the several territories vary to such a degree that question has arisen as to the lawfulness of some or all of such fares and that question has also arisen as to the lawfulness of the surcharges. Questions were raised at the recent hearing at which the coach fare of a cent and one-half a mile being experimented with by the Southern was in issue, by some of the commissioners, as to the propriety of the difference between such a rate and the rates of 2 to 3.6 cents a mile maintained for coach or sleeping car fares in various territories. It is understood, also, that the failure of the eastern railroads to agree on any reduction in their basic fares is one reason for the investigation.

The commission's order says that nothing in it shall be interpreted as either approving or disapproving any experiments with reduced fares or surcharges which have been or may be undertaken pending decision in this proceeding. The investigation is assigned for hearing at such times and places as the commission may hereafter direct.

Long Island Summer Schedules

"Faster, more frequent, comfortable and convenient train service than it has been possible to provide since the depression began, is the keynote of the Long Island's forthcoming change in time-table which

will become effective Sunday, June 24," says a June 12 announcement by Vice-President George Le Boutillier.

"Fully 90 different communities on Long Island," said Mr. Le Boutillier, "will benefit directly by the 1934 summer schedule, either through the operation of new passenger trains never before enjoyed, or the restoration of trains which were run during the so-called 'prosperous days.' At the same time, many other communities will benefit indirectly by the speeding up of service in general and the relief to be given heavily loaded commuter trains."

When the summer schedule takes effect, cars now being reconditioned, will be placed in service on the various branches. A program covering maintenance and painting of station buildings is also well under way. Repairs and improvements to station driveways, renovation of freight and passenger facilities and cleaning up and oiling of the entire right-of-way, are now being carried on. A limited number of air-conditioned Pullman cars and standard steel coaches will be in service on long distance trains.

The low-fare one-day excursions to Montauk, Greenport and Shelter Island, will be continued during 1934 on a larger scale than heretofore. A new "fishermen's train," will be run on Sundays to the Great South Bay fishing centers, and special train and bus service, at low round-trip fares, will be maintained to and from Jones Beach.

I. C. Magazine Celebrates Twenty-Fifth Birthday

With the June, 1934, number, the Illinois Central Magazine celebrates its twenty-fifth birthday, thus completing a quarter of a century of service devoted to the promotion of safety, economy and efficiency in railway operation, to the development of new transportation business and to fostering good will within and outside the company organization. Approximately 9,000,000 copies of the magazine have been distributed in this period.

Allegheny Board Meeting

The twenty-seventh regular meeting of the Allegheny Regional Advisory Board will be held at Pittsburgh, Pa., on June 21. The program includes an exhibit of methods of packing for shipping various commodities, staged by the Freight Container Bureau of the American Railway Association, an open forum discussion of Section 4 of the Transportation Act and reports of committees. At a luncheon session there will be an address by a prominent speaker on a subject of current interest.

Consider Abandoning 3250 Miles in Canada

C. N. R. chairman stresses economies, favors capital adjustment—No quarrel with C. P. R.

Economy consistent with efficient public service is the goal of the Canadian National, declared Judge C. P. Fullerton, chairman of the trustees of that company, before the House committee on railways in Ottawa last week. He pointed out also that railway business can increase only as general business improves, that the two principal railways are considering 36 joint economy projects involving the abandonment of 2,100 miles of line and the Canadian National in addition is considering proposals for closing 1,150 miles of light traffic non-competitive road.

Judge Fullerton also said that the capital structure of the C. N. R. is "top heavy," and he believes that the legislative order of 1933 against the funding of income deficits should be applied retroactively. The trustees of the Canadian National, he said, decline to enter into public controversy with the Canadian Pacific.

Discussion in the committee following Mr. Fullerton's statement indicated a desire on the part of some members, chiefly Liberal, to have the capital structure of the railway reduced. It was contended by one member that even if the demand made in some quarters were met and the Canadian National were handed over to the Canadian Pacific the debt of the former and the interest charges thereon would remain and would have to be met.

Hon. R. J. Manion, Minister of Railways and Canals, pointed out that if the whole of the railway debt owed to the public were wiped out and written off the earning power of the road would not be affected one way or the other.

Dr. Peter McGibbon (Conservative), made a strong plea on behalf of the Canadian taxpayers who are the owners of the Canadian National, and also on behalf of employees who have been temporarily deprived of employment because of economies. He favored the establishment of a fund to provide payments to these employees until business had improved and it was possible again to give them jobs.

Judge Fullerton's statement follows in part:

"I am not one of those who believe that the Canadian National is a hopeless proposition. I am impressed with the potential earning power of the property. The net earning power is at the present time obscured by the depression and by the unwieldy capital structure. It is likewise

true there are unnecessary duplicate lines, both within the Canadian National and as between that system and the Canadian Pacific; also there are portions of the system which are now unprofitable and which can never be otherwise. Broadly speaking, however, the system is well located to serve the industrial east; its lines in Northern Quebec and Ontario have shown a surprising degree of development in lumbering, pulp and paper, mining, and through the clay belt in agricultural development, and its lines in the prairie provinces are fortunately located.

"What is called for at the present time is a policy of rigid economy and of careful administration, and this the board of trustees and the management intend to give to the best of their ability.

"The fundamental factor in the problem of Canadian National Railways is one of gross revenues. In 1933 our gross revenue was 148 million dollars, the lowest in the history of the system since the completion of its constituent parts. In 1928 the revenues of the system were 312 million dollars, so that 1933 is below the level of that peak year by 164 millions, well over 50 per cent. The revenues for 1933 were more than 107 million dollars less than the average previous ten years, a decrease of 42 per cent. This terrific shrinkage of \$2,000,000 per week in the business handled by the railway is the major cause of our present difficulties.

"The low level of business transacted, of course, is not peculiar to Canadian National. The Canadian Pacific is experiencing similar difficulties. In 1933 our revenues decreased 7.81 per cent compared with the previous year. The C. P. R. revenue decrease was 7.80 per cent. Compared with the peak year of 1928 our revenues decreased 52.44 per cent. On the Canadian Pacific the decrease was 52.78 per cent. Taking Class I roads of the United States, 1933 in comparison with 1928, their revenues decreased 49.89 per cent.

"Every departmental head has undertaken a close survey of his department to see what can be done to secure increased efficiency and greater economy. In every direction our officials are at work to see that every item of unnecessary expense is discontinued.

"Unfortunately economies cannot be made without displacing labor. Out of every dollar spent in operating the railway, 63 cents is a direct payroll expense. Whilst, therefore, to secure economies labor is necessarily displaced, our great desire is to see the men returning to work in the essential services. In this respect it is gratifying to note that for the first three months of the year, compared with the previous year, the number of employees at work has increased by 6,463.

"Apart from revenues and expenses the major item in our problem is the annual interest on the funded debt in the hands of the public. In 1923 the amount was 35½ millions; in 1928, 42 millions; in 1932 the peak was reached at \$56,965,000. This might be classed as an uncontrollable item. There is not very much the trustees can do about it. It was here when we entered office.

"Under the policy which has been in

effect since 1932 there has been a gradual reduction in the total interest charges payable to the public, and opportunities will arise of refunding existing issues at a lower rate of interest.

"As to the progress made in co-operation between the two railways, there are a number of proposals involving the elimination of apparently unnecessary rail mileage by the abandonment of one company's line and the joint use of the other's, where the lines of both companies are generally parallel and perform similar functions. Studies are in various stages upon thirty-six projects involving proposals for the abandonment of approximately 2,100 miles.

"Apart from the question of co-operative action between the two railways in the abandonment of competitive lines, a committee of the Canadian National has actively in hand the study of proposals for the abandonment of approximately 1,150 miles of light traffic non-competitive lines in various sections of the country. Before any line can be abandoned, however, permission must be obtained from the Board of Railway Commissioners.

"Co-operative measures which have been put into effect up to date are yielding \$1,250,000 yearly joint economy. They comprise passenger train pooling Montreal-Quebec, Montreal-Toronto and Toronto-Ottawa, joint car cleaning staffs at Quebec and St. John, a joint station at Gladstone, Manitoba, provision for joint switching at Portage la Prairie, an arrangement to haul each for the other, grain cars between Calgary, Edmonton and Kamloops to save distance, an arrangement to handle Canadian National traffic in Canadian Pacific trains between Fredericton and Vanceboro and an interchange of freight traffic at Sherbrooke instead of Lennoxville.

"Many other co-operative projects are being studied, including extension of the pooling of competitive train services, joint terminal operations, joint stations, joint up-town and off-line passenger agencies and the unification of telegraph and express facilities.

"On the one hand the Canadian National is deemed to be a business enterprise subject to comparison with its competitor, expected to produce a return on the capital invested and condemned in certain quarters because it does not fully do so. On the other hand, it is expected to function as an agency of government opening up for development in a pioneer way sections of the country without expectation of a direct return on the capital. It is also expected to shoulder the debts and interest charges of its predecessor corporations, all of which were hopelessly bankrupt. I do not see how you can have it both ways.

"My personal view is that the capital structure is top heavy. It contains interest bearing debts incurred to acquire assets now obsolete or which have ceased to exist; also debts incurred to pay past deficits in operation, also capital stocks definitely determined by competent tribunals to be worthless.

"Reference has been made to public addresses delivered by the president of the Canadian Pacific. It had not been my intention to refer to these speeches or to the efforts which are presently being carried on to promote the idea of amalga-

tion or, failing that, unified management of the two great railway systems, but since the matter has been raised in the committee I feel it my duty to make a brief statement.

"In view of articles and statements in the press and elsewhere, a feeling of unrest was developing in the organization, and in a recent number of the Canadian National Railways Magazine, and in addresses to meetings in Montreal, Toronto, Winnipeg and Moncton, confined to railway employees, the matters of amalgamation and unified control were touched on. The results, it is believed, have been a strengthening of the moral of the employees.

"There is a vast difference between the powers of the trustees and those of the directors of the Canadian Pacific, and nowhere is this greater than in matters pertaining to the formation of public opinion. It is open to the latter body to exercise as broadly as they wish, and at whatever expense they care to incur, their rights as private citizens, and, as the controllers of private property, to place their views and aims before Parliament and the country. The trustees must carry on within a definitely circumscribed area, and quite properly so.

"We desire to get on the closest terms of co-operation with the Canadian Pacific Railway, and our efforts will be devoted to giving the Canadian people as good a transportation service at as low a cost as is possible, without any desire to hurt our great competitor."

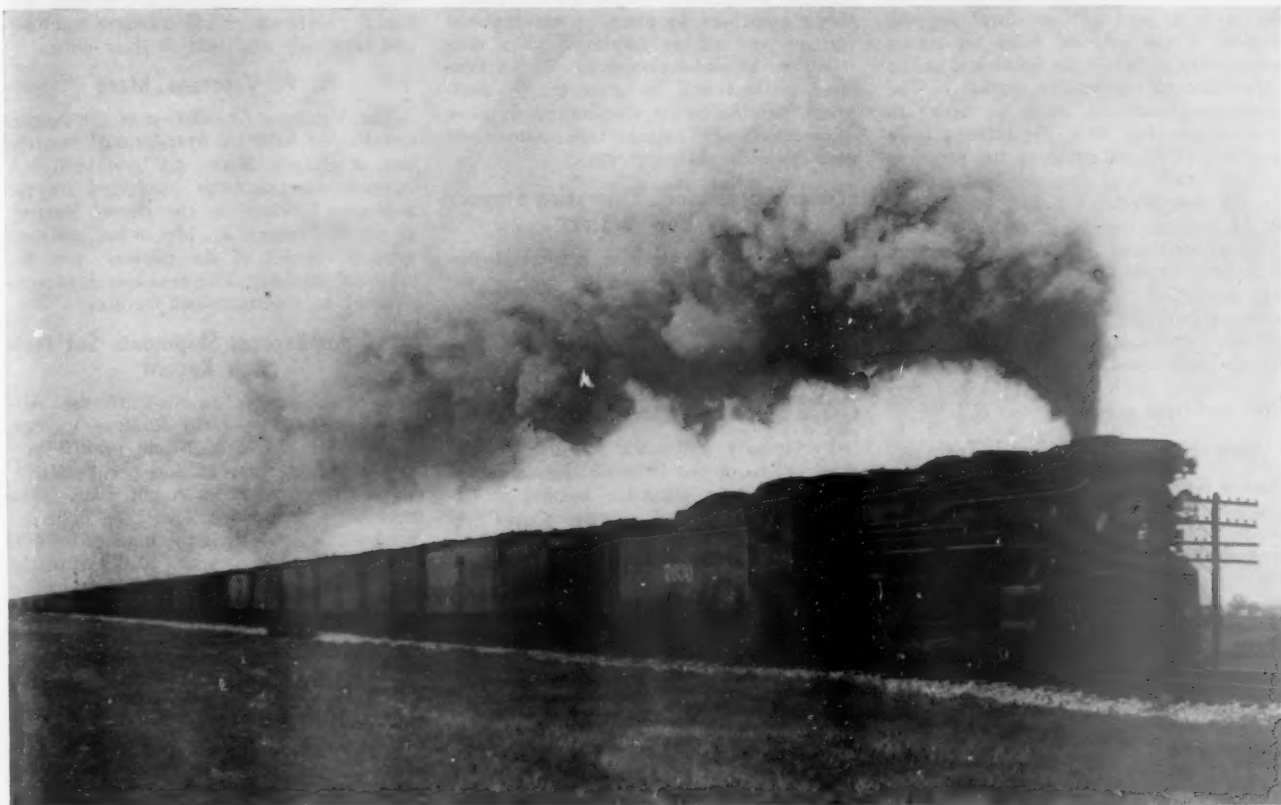
New Grade Crossing Approved in Pennsylvania

Pennsylvania follows North Dakota in approving the abolition of a subway and the establishment of a grade crossing instead. It is at Clairton, Allegheny County. State street, the alignment of which is very irregular, crosses beneath the track of the Pittsburgh & West Virginia at a point where the surface of the street is below the flood level of the Monongahela river; and, on the application to the city, authority is given for the city, in the reconstruction and straightening of the street to establish a grade crossing in place of the underpass. The street is to be raised about 17 feet, so that it will be about at the level of the railroad track and several feet above high flood level. The street cannot be carried above the railroad because of the proximity of structures which would necessitate steep approaches and excessive cost. The view will be good in all directions, and at present there are usually only four trains a day to pass over the crossing. The order of the commission calls for the installation of flashing-light automatic signals, and the city of Clairton has agreed to fill in the underpass.

Freight Rate Investigations Proposed

Senator George, of Georgia, who recently introduced in the Senate a resolution proposing a Congressional investigation of the railroad freight rate structure, on June 12 introduced a new resolution proposing, instead, an investigation by the Interstate Commerce Commission of the relations of rates in different parts of the United States.

Continued on next left-hand page



MODERN MOTIVE POWER ALONE MEETS MODERN DISTRIBUTION NEEDS

Fast service to shippers, involving freights at passenger train speeds, has required the cream of the country's motive power.

With light traffic there were enough Super-Power locomotives to speed up and maintain schedules, on some roads.

As traffic increases, the improved service can continue only if modern motive power is available.

Super-Power locomotives alone can do this work without sacrifice of efficiency and economy.



The previous resolution had aroused some criticism as being designed to influence the decision of the Interstate Commerce Commission in a pending case involving the question of the relative rates on cotton textiles from points in the South and points in the East to competitive markets. The commission would be asked to report to Congress showing, first, the relative book value and I.C.C. valuation of the property of Class I railroads, separated by the three principal rate territories, and, second, the cost of hauling freight in each territory. He also introduced a resolution directing the Federal Trade Commission to make an investigation of the activities of railroad freight associations and the activities of railroads in jointly prescribing rates through such associations, and to report as to whether such action is in violation of the anti-trust acts.

New Haven Streamlined Train

In the *Railway Age* of June 3 announcement was made that the New York, New Haven & Hartford had placed an order for a high-speed streamlined train to be built by the Goodyear-Zeppelin Corporation. Accompanying this announcement was a brief general description of the train. From further information since available it is learned that this three-car articulated "Rail-Zeppelin" will have a length of 207 ft., a seating capacity for 164 passengers, and a light weight of approximately 240,000 lb. It is anticipated that actual building construction will be started late in July and delivery made in about eight months.

The power plant will consist of two 400-hp. Westinghouse Diesel engines direct connected to electric generators with motors driving the front and rear trucks. It is estimated that the train can be started and accelerated to a speed of 60 m.p.h. in less than 3 min. and that a constant speed of 90 m.p.h. can be easily maintained.

This train will be fully streamlined with smooth outside surfaces and the trucks and undersurfaces thoroughly shrouded. The body will be supported on the trucks by means of hydraulically controlled spring shock absorbers which, it is anticipated, will add appreciably to the riding qualities and to the ease with which the train will take curves.

This train will be noticeable for the extensive use of rubber materials, among

which are rubber flooring, seats of metal framework with rubber-filled upholstery, rubber mountings for engines, rubber shock absorbers in place of conventional springs, and rubber insulation as a contribution to sound-proofing. The articulated sections will be connected by dust-proof, flexible rubber diaphragms in place of the ordinary curtain type connections used between passenger cars.

Federal Barge Line's Operation Stopped by Low Water

The Federal Barge Line, on June 4, discontinued the acceptance of freight for delivery at river points between St. Louis, Mo., and Minneapolis, Minn., because of the low stage of the river above Rock Island, Ill.

Grape Shipments Placed at 40,000 Cars

Preliminary estimates of juice grapes that will be moved from California during the 1934 season place the amount at 40,000 carloads. If this estimate proves correct, it will indicate that the repeal of the eighteenth amendment did not prove a death blow to the shipment of juice grapes, as was expected last year and early in 1934.

Governor Ely Signs Massachusetts Motor Carrier Law

Governor Joseph B. Ely, of Massachusetts, on June 7 signed the new motor carrier regulatory law recently enacted in that state. Provisions of the law are along the lines of those of the bill which was summarized in the news article entitled "Mass. Truck Operators Assent to Regulation," which appeared on page 586 of the *Railway Age* of April 21.

Seeks Appointment of Receiver for Brotherhood's Pension Association

The appointment of a receiver to manage the Brotherhood of Locomotive Engineers and the Brotherhood's Pension Association was sought at Cleveland, Ohio, on June 5, in a suit filed in the federal district court by George Berry who also asked the removal of three major brotherhood officers and an accounting of their financial operations in connection with the association. He charged that the association was flourishing up to June 30, 1931, when it had liquid assets totaling \$3,500,000; that subsequently, it lent more than \$3,000,000 to

the brotherhood and various subsidiaries; that all loans were made either with no security or wholly inadequate security and that the three major officers were wantonly and carelessly negligent in their duties.

N. P. Veterans Meet

The Veterans Association of the Northern Pacific held its tenth annual convention at Duluth, Minn., on June 14-16. A business meeting was conducted on the first day, followed by the annual banquet, at which Frederic D. McCarthy, assistant general counsel of the railway, was the principal speaker. The next two days were devoted to entertainment features.

April Air-Express Shipments Set New High Record

April shipments handled by the Air-Express Division of the Railway Express Agency were at an all-time peak, representing an increase of 188 per cent over shipments handled in April, 1933. The number of shipments handled in April totaled more than half the number handled during the entire year 1932, with the heavier gains being reported from metropolitan airports such as Chicago; Toledo, Ohio; Tulsa, Okla.; Kansas City, Mo.; Seattle, Wash.; New York; Dallas, Texas; Los Angeles, Cal., and Cleveland, Ohio.

Railway Employment Increasing

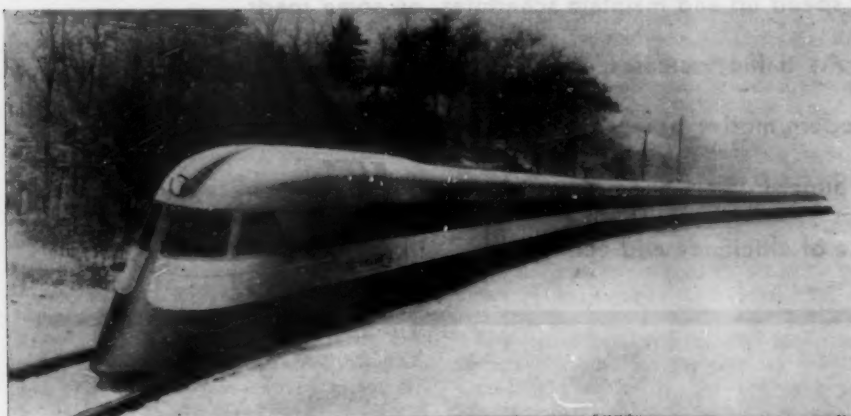
The number of employees in the service of Class I railroads, excluding switching and terminal companies, at the middle of the month of May was 1,043,064, according to the Interstate Commerce Commission's preliminary statement. This was an increase of 11.15 per cent as compared with the number in May, 1933, and of 3.1 per cent as compared with April, 1934. Employment in the maintenance of equipment and stores group was 17.42 per cent greater than in May of last year. Employment in May was 58.4 per cent of the average for the period 1923-1925.

Waterway Act Applied to Columbia and Snake Rivers

The House on June 11 passed the bill which had previously been passed by the Senate amending the Inland Waterways Corporation act to include the Columbia and Snake rivers within its provisions so that the Interstate Commerce Commission may grant certificates of public convenience and necessity for operation of transportation on those rivers and require the establishment of joint routes and rates with the railroads. Opponents of the bill argued that the purpose was to pave the way for federal appropriations for the improvement of the rivers for navigation purposes.

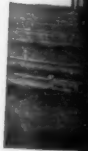
North Western and Soo Pool Ore Traffic

The Chicago & North Western and the Minneapolis, St. Paul & Sault Ste. Marie, on June 1, entered into an arrangement for the pooling of ore shipments from the Gogebic range of upper Michigan and northern Wisconsin which is expected to effect material economies for both lines through the elimination of duplicate facilities. The ore will be divided between the two companies on an agreed percentage,



Preliminary Sketch of the "Rail Zeppelin," to Be Built for the New Haven

June



FR

The previous resolution had aroused some criticism as being designed to influence the decision of the Interstate Commerce Commission in a pending case involving the question of the relative rates on cotton textiles from points in the South and points in the East to competitive markets. The commission would be asked to report to Congress showing, first, the relative book value and I.C.C. valuation of the property of Class I railroads, separated by the three principal rate territories, and, second, the cost of hauling freight in each territory. He also introduced a resolution directing the Federal Trade Commission to make an investigation of the activities of railroad freight associations and the activities of railroads in jointly prescribing rates through such associations, and to report as to whether such action is in violation of the anti-trust acts.

New Haven Streamlined Train

In the *Railway Age* of June 3 announcement was made that the New York, New Haven & Hartford had placed an order for a high-speed streamlined train to be built by the Goodyear-Zeppelin Corporation. Accompanying this announcement was a brief general description of the train. From further information since available it is learned that this three-car articulated "Rail-Zeppelin" will have a length of 207 ft., a seating capacity for 164 passengers, and a light weight of approximately 240,000 lb. It is anticipated that actual building construction will be started late in July and delivery made in about eight months.

The power plant will consist of two 400-hp. Westinghouse Diesel engines direct connected to electric generators with motors driving the front and rear trucks. It is estimated that the train can be started and accelerated to a speed of 60 m.p.h. in less than 3 min. and that a constant speed of 90 m.p.h. can be easily maintained.

This train will be fully streamlined with smooth outside surfaces and the trucks and undersurfaces thoroughly shrouded. The body will be supported on the trucks by means of hydraulically controlled spring shock absorbers which, it is anticipated, will add appreciably to the riding qualities and to the ease with which the train will take curves.

This train will be noticeable for the extensive use of rubber materials, among

which are rubber flooring, seats of metal framework with rubber-filled upholstery, rubber mountings for engines, rubber shock absorbers in place of conventional springs, and rubber insulation as a contribution to sound-proofing. The articulated sections will be connected by dust-proof, flexible rubber diaphragms in place of the ordinary curtain type connections used between passenger cars.

Federal Barge Line's Operation Stopped by Low Water

The Federal Barge Line, on June 4, discontinued the acceptance of freight for delivery at river points between St. Louis, Mo., and Minneapolis, Minn., because of the low stage of the river above Rock Island, Ill.

Grape Shipments Placed at 40,000 Cars

Preliminary estimates of juice grapes that will be moved from California during the 1934 season place the amount at 40,000 carloads. If this estimate proves correct, it will indicate that the repeal of the eighteenth amendment did not prove a death blow to the shipment of juice grapes, as was expected last year and early in 1934.

Governor Ely Signs Massachusetts Motor Carrier Law

Governor Joseph B. Ely, of Massachusetts, on June 7 signed the new motor carrier regulatory law recently enacted in that state. Provisions of the law are along the lines of those of the bill which was summarized in the news article entitled "Mass. Truck Operators Assent to Regulation," which appeared on page 586 of the *Railway Age* of April 21.

Seeks Appointment of Receiver for Brotherhood's Pension Association

The appointment of a receiver to manage the Brotherhood of Locomotive Engineers and the Brotherhood's Pension Association was sought at Cleveland, Ohio, on June 5, in a suit filed in the federal district court by George Berry who also asked the removal of three major brotherhood officers and an accounting of their financial operations in connection with the association. He charged that the association was flourishing up to June 30, 1931, when it had liquid assets totaling \$3,500,000; that subsequently, it lent more than \$3,000,000 to

the brotherhood and various subsidiaries; that all loans were made either with no security or wholly inadequate security and that the three major officers were wantonly and carelessly negligent in their duties.

N. P. Veterans Meet

The Veterans Association of the Northern Pacific held its tenth annual convention at Duluth, Minn., on June 14-16. A business meeting was conducted on the first day, followed by the annual banquet, at which Frederic D. McCarthy, assistant general counsel of the railway, was the principal speaker. The next two days were devoted to entertainment features.

April Air-Express Shipments Set New High Record

April shipments handled by the Air-Express Division of the Railway Express Agency were at an all-time peak, representing an increase of 188 per cent over shipments handled in April, 1933. The number of shipments handled in April totaled more than half the number handled during the entire year 1932, with the heavier gains being reported from metropolitan airports such as Chicago; Toledo, Ohio; Tulsa, Okla.; Kansas City, Mo.; Seattle, Wash.; New York; Dallas, Texas; Los Angeles, Cal., and Cleveland, Ohio.

Railway Employment Increasing

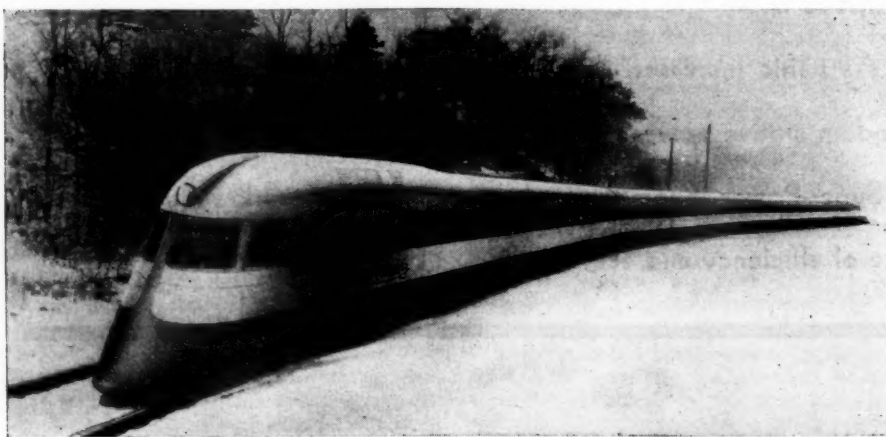
The number of employees in the service of Class I railroads, excluding switching and terminal companies, at the middle of the month of May was 1,043,064, according to the Interstate Commerce Commission's preliminary statement. This was an increase of 11.15 per cent as compared with the number in May, 1933, and of 3.1 per cent as compared with April, 1934. Employment in the maintenance of equipment and stores group was 17.42 per cent greater than in May of last year. Employment in May was 58.4 per cent of the average for the period 1923-1925.

Waterway Act Applied to Columbia and Snake Rivers

The House on June 11 passed the bill which had previously been passed by the Senate amending the Inland Waterways Corporation act to include the Columbia and Snake rivers within its provisions so that the Interstate Commerce Commission may grant certificates of public convenience and necessity for operation of transportation on those rivers and require the establishment of joint routes and rates with the railroads. Opponents of the bill argued that the purpose was to pave the way for federal appropriations for the improvement of the rivers for navigation purposes.

North Western and Soo Pool Ore Traffic

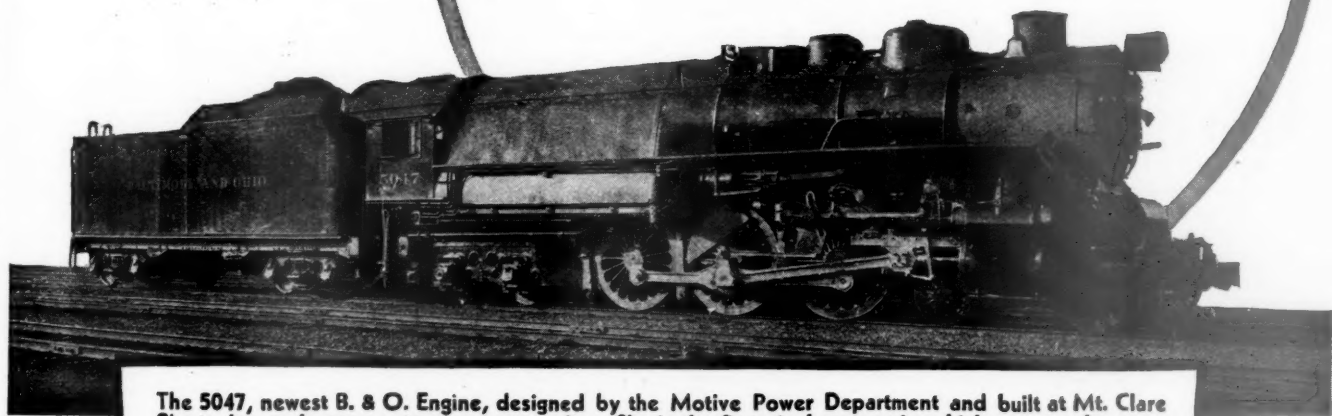
The Chicago & North Western and the Minneapolis, St. Paul & Sault Ste. Marie, on June 1, entered into an arrangement for the pooling of ore shipments from the Gogebic range of upper Michigan and northern Wisconsin which is expected to effect material economies for both lines through the elimination of duplicate facilities. The ore will be divided between the two companies on an agreed percentage,



Preliminary Sketch of the "Rail Zeppelin," to Be Built for the New Haven

Continued on next left-hand page

THE MOST POWERFUL PASSENGER LOCOMOTIVE OF ITS TYPE



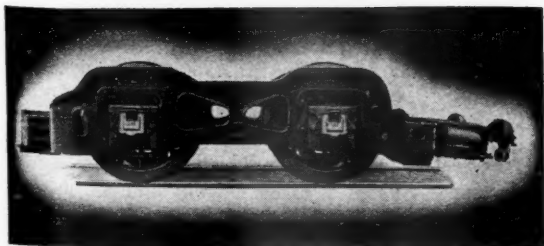
The 5047, newest B. & O. Engine, designed by the Motive Power Department and built at Mt. Clare Shops, has undergone extensive tests on line. She is the first single-expansion, high-pressure locomotive constructed by this road, and will be used in heavy, fast passenger service.

To provide for the Capitol Limited and other through passenger trains, an economical high power locomotive that will more easily maintain schedules, the Baltimore and Ohio Railroad converted Pacific Type Locomotive No. 5047 to a 4-6-4 Type.

Among the modernizing factors installed were the Emerson high pressure boiler of increased capacity, a four wheel trailer truck and The Locomotive Booster.

Cylinder size was reduced from 27 in. diameter to 21½ in. diameter. The higher pressure, more efficient boiler increased tractive effort by 2,000 lbs.

This increase in sustained capacity of the main locomotive together with the added capacity of The Booster for starting and for acceleration enables this locomotive to handle heavy passenger trains easily and avoid delays.



Franklin parts insure interchangeability, long life and dependability of service. Genuine Franklin parts are a guarantee of maximum trouble free service.



FRANKLIN RAILWAY SUPPLY COMPANY, INC.

NEW YORK

CHICAGO

MONTREAL

based on the performance of the past year. The arrangement provides for the joint use of facilities and joint maintenance and operation on the range and at Ashland, Wis.

Fulton, Ky. Citizens to Stage Railroad Celebration

A combined Fourth of July celebration and railway exposition has been planned for July 4 by the citizens of Fulton, Ky., to mark the eightieth anniversary of railway transportation in western Kentucky. It was on July 4, 1854, that the first steam locomotive ever brought to that part of the state made its maiden trip from Paducah to Florence over the first completed portion of what is now the Illinois Central line through Mayfield and Fulton. The Illinois Central will furnish a replica of its pioneer train and an exhibit of modern motive power. Tentative plans include a pageant, parade, displays, contests, prizes, fireworks and athletics.

N. & W. Inaugurates Air-Conditioned Passenger Equipment

The operation of air-conditioned passenger equipment on the Norfolk & Western was inaugurated recently when that road placed two air-conditioned dining cars in service between Norfolk, Va., and Cincinnati, Ohio, and Roanoke, Va., and Hagerstown, Md. The two diners, one of which is a combination dining-lounge car, are the first of 46 air-conditioned cars including the 21 Pullman cars which will be placed in service on Norfolk & Western trains during the summer. The 25 N. & W. cars of the air-conditioned fleet will include seven diners, ten all-steel deluxe coaches and eight combination passenger-baggage cars.

99.4 Per Cent on Time

The 50,808 scheduled passenger trains operated during May within the New York zone of the Pennsylvania set up a 99.4 per cent on-time record, according to a statement issued on June 8, by George Le Boutillier, vice-president. In addition to the scheduled trains, 6,338 extra trains were operated in the New York zone so that a total of 57,146 passenger trains or nearly 2,000 per day were dispatched from the various terminals during May. During 1933 the New York zone reported an average on-time performance of 99.2 per cent for scheduled passenger trains. With the exception of February, the on-time performance for every month this year has exceeded 99 per cent.

New Nickel Plate Trains

The New York, Chicago & St. Louis, in conjunction with the Delaware, Lackawanna & Western, will establish on June 17 two new trains—one in each direction—between New York and Chicago for the accommodation of visitors to the World's Fair. The westbound train will leave New York at 8:30 p. m., Eastern Standard time, and arrive in Chicago at 8:10 p. m., Central Standard time, the following day, the eastbound train will leave Chicago at 7:30 p. m. and arrive in New York at 7:12 p. m. the following day. With the inauguration of this new service the Nickel Plate

will have in operation three daily trains in each direction providing through service between New York and Chicago. All will carry completely air-conditioned Pullman cars, including single bedroom cars between Cleveland, Ohio, and Chicago.

Wabash Merges Accounting in Decatur Office

Division accounting departments now at various points on the Wabash will be consolidated into one general office in Decatur, Ill., on July 1. The change involves the division accounting offices at Decatur, Moberly, Mo., and Montpelier, Ohio, and the accounting offices of the Chicago and St. Louis terminals. The move is in keeping with the policy begun some time ago in eliminating numerous accounting offices all over the system.

The mechanical and store departments accounting forces had been previously consolidated into a general department at Decatur and these will all be merged with the new force on July 1. All Wabash accounting work for the entire system will be done in Decatur, except that involving the train and enginemen. A year or two ago this work was consolidated in one general office at St. Louis.

N. & W. Vacation Fares

The Norfolk & Western is offering, for the summer vacation season, an extensive schedule of reduced round-trip fares to destinations throughout the greater part of the United States and Canada. Two classes of week-end fares are being offered—one, under which tickets are sold between all N. & W. stations and to destinations in the southeast for all trains on Friday, Saturday and Sunday with a final return limit of midnight Tuesday following the date of sale; the other, under which tickets are sold for all trains on Friday afternoon, Saturday and for forenoon trains on Sunday to destinations north of the Potomac and Ohio rivers with the return limit of midnight Monday. Stopovers are permitted on these week-end tickets which will be on sale until September 30. Also thirty-day limit reduced vacation fares are being offered as well as special excursion rates to the Chicago World's Fair and to New Jersey and Virginia seashore resorts.

Overtime \$330 Per Month for Unprofitable Passengers

The New York Central has been ordered by the New York Public Service Commission to continue operation of passenger trains between Batavia and North Tonawanda until the close of the public schools in North Tonawanda, in June. It is held that the service will not be required after the close of the public school year. The company had given notice that it intended to discontinue passenger service after April 2. The two trains are the only ones on this branch and are local freight trains with a combination baggage and passenger car. It has been necessary to operate them on a fixed schedule to accommodate school pupils going to school in North Tonawanda, and in order to conform to this schedule the time of the crew runs into overtime, amounting to about \$330 a

month; and the freight business could be handled without payment of overtime. It is intended to operate the trains as freight trains and do away with the passenger service.

In the past the trains were patronized by more students, but the number has decreased since inauguration of bus service to Williamsville. The present order is issued to permit pupils to complete their high school courses this year.

Correction

The following corrections are made in the article "Survey Throws Spot Light on Second-Hand Material" in the May 19, 1934, issue of the *Railway Age*. In the report for the Southern Pacific-Pacific system, on page 737, the probable effect on stores expense of using values of new material is given as less than 0.5 per cent of the value of material issued. This estimate considers only materials reclaimed or recovered at reclamation plants. Including second-hand wheels, axles, air-brake material, tires, track tools, frogs and items repaired on stores orders in various shops would change the difference in the stores expense rate to 2 per cent of the total value of material issued.

On the Chicago & North Western, second-hand and repaired material, if good "live" material, is taken into stock and also reissued at new value, instead of at 60 per cent of market value as reported on page 736, the cost of repairing being charged and the difference between the cost to repair and the market value being credited to the account using the material. Exceptions to this rule prevail with respect to serviceable rail, switch points, frogs and fastenings, which are reissued at 80 per cent of their value new, and second-hand cast freight-car wheels and axles, which are handled at usable value.

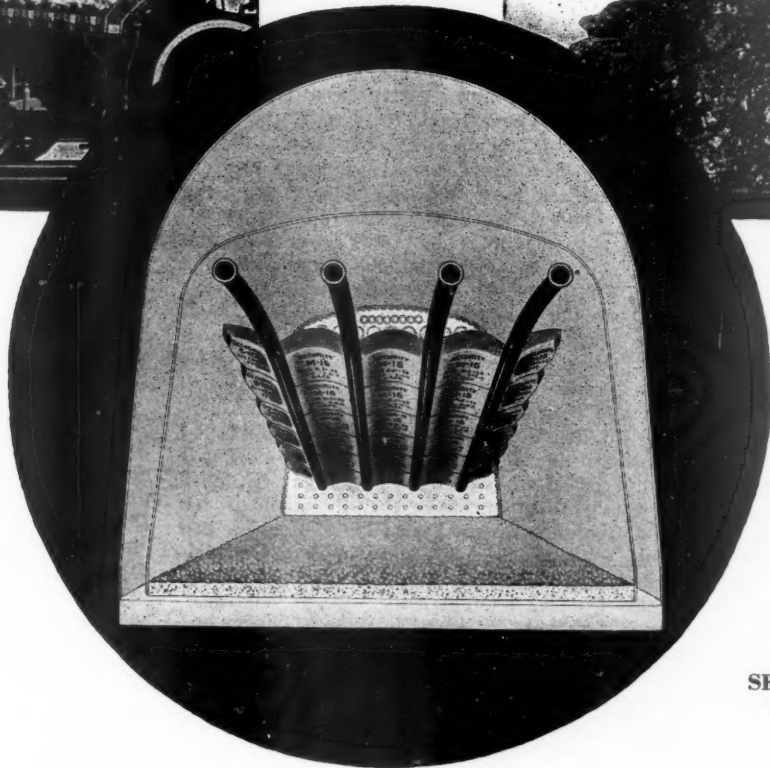
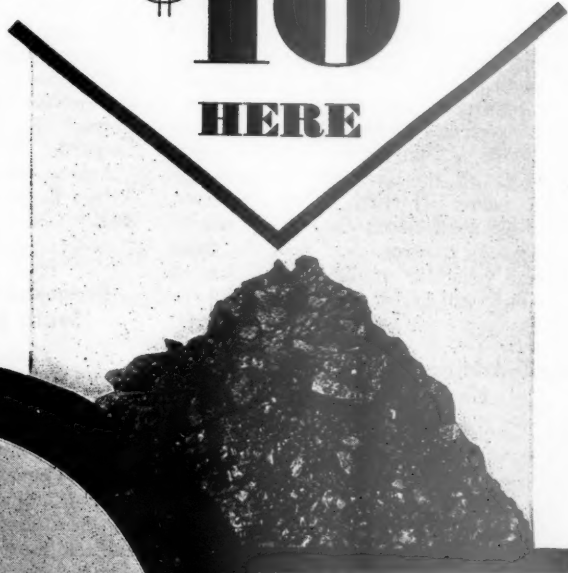
New York Central to Dedicate West Side Project in New York

Dedicatory ceremonies at the new St. John's Park Freight Terminal on June 28, will mark the opening of this facility, the initial stage of the New York Central's West Side improvement program in New York City. City and state officials as well as approximately 1,700 business men have been invited to the dedication.

The New York Central has invited these guests to ride on the first, and probably the last, passenger train that will be operated down the West Side over the new line. The train, in two sections, will leave Grand Central at 10:15 a. m. and will go to Spuyten Duyvil and thence down the West Side over that portion of the improvement that has been completed.

From Spuyten Duyvil south to Seventy-second street the new line is ready with the exception of two grade crossings to be constructed at West Seventy-ninth and West Ninety-sixth streets. Reconstruction of the yards at Thirtieth street and at Sixtieth street is soon to be started, together with the construction of a subway through which the trains will be operated between the two yards. From Thirtieth street south the work is complete and the special trains on the day of the celebration will be operated over the new viaduct that runs from Thirtieth street

Continued on next left-hand page

SAVING**\$1****HERE****COSTS****\$10****HERE**

There's More to
SECURITY ARCHES
Than Just Brick

... \$1.00 FOR ARCH BRICK PAYS FOR ITSELF TEN TIMES

The last course of Security Arch brick works just as effectively as the other courses. It can be left off only at the expense of an increase in fuel consumption.

The economy of the Security Arch was thoroughly established years ago. More recent tests show that every dollar you "save" by cutting

down on the length of the Arch costs you ten dollars in the form of increased fuel; net loss nine dollars.

For economy of operation be sure that your locomotives leave the roundhouse with a full Security arch with every brick in place.

**HARBISON-WALKER
REFRACTORIES CO.**

Refractory Specialists



**AMERICAN ARCH CO.
INCORPORATED**

*Locomotive Combustion
Specialists* » » »

south to the terminus of the line at St. John's Park Freight Terminal, Spring street, one block north of the Holland tunnel.

Regular operation over the new viaduct below Thirtieth street and into St. John's Park Freight Terminal will be started Monday, July 2. This will result in taking practically all trains off Tenth avenue and West street. Until the new construction between the Thirtieth and Sixtieth street yards is completed the railroad will operate trains on Eleventh avenue. The viaduct below Thirtieth street, however, will result immediately in the elimination of 40 grade crossings and will do much to speed vehicular traffic. Operation on the viaduct will be by Diesel electric locomotives.

Large Additional Expenditures for Highways Proposed

The House and the Senate on June 9 adopted the conference report on a bill authorizing large future appropriations for highway construction by the federal government, subject to specific future appropriations, covering a three-year period. The House bill had provided for an authorization of \$400,000,000 but this was reduced in the Senate and by the conferees to \$200,000,000, on the ground that there remains carried over into the next fiscal year from a previous appropriation of \$400,000,000, the sum of \$230,000,000 to be actually paid out of the Treasury during the next year. To that amount it is proposed to add \$100,000,000 to carry out a recommendation made by the President in his budget message, so that for the first year there will be a grant, unmatched by the states, amounting to \$330,000,000. For the second year a grant of \$100,000,000 is proposed, in addition to \$125,000,000 for 1936 and a similar amount for 1937, to be matched by the states. The bill also authorized \$24,000,000 for roads in national forests, national parks, and Indian reservations, for each of the years 1936 and 1937. A provision was added to the bill that after June 30, 1935, federal aid for highway construction will be extended only to those states that use at least the amounts now provided by law for such purposes in each state from motor-vehicle and gasoline taxes.

New York Railroad Club Outing June 28

"A complete day's fun—rain or shine" is promised to members and guests of the New York Railroad Club who attend its annual outing at the Westchester Country Club, Rye, N. Y., on June 28. There will be the usual golf, with its contests for the Brady Cup and the Herbert H. Vreeland trophy, putting contests for golfers and non-golfers, skee ball, ping pong and swimming. Then there is the dinner "with no speeches," and, "if by any chance it should rain," complete indoor entertainment will be provided.

J. S. Doyle, general chairman in charge of the outing, will be assisted by Carl H. Beck, vice-chairman in charge of golf, George B. Allison, vice-chairman in charge of games and A. E. McGuire, secretary for the outing. Members of the general committee are: D. W. Pye, chairman; A. N.

Dugan, assistant chairman; T. P. O'Brian; Scott Donahue; W. M. Wampler; J. S. Doyle, Jr.; R. P. Cooley; R. F. O'Leary; E. B. Smith; Maurice N. Trainer; F. H. Hardin; R. P. Townsend; H. A. Pratt; and F. J. White. Other committees, with their chairmen, are as follows: Reception, H. H. Vreeland; attendance, C. C. Warne; golf, J. F. Craig; transportation, C. G. Melvin; dinner, George H. Ord; entertainment, Samuel F. Pryor, Jr.; games, J. E. Leonard.

Among the guests at the outing will be Alfred E. Smith, former Governor of New York, who is listed as chairman of the "Goodfellowship Committee."

Pennsylvania and Reading Merge South Jersey Bus Operations

All Philadelphia-Atlantic City and South Jersey motor coach services operated by the Reading Transportation Company and the Pennsylvania-Greyhound Transit Company have been taken over by the Pennsylvania-Reading Motor Lines, Inc., an affiliate of the Pennsylvania-Reading Seashore Lines, which latter was organized some time ago to co-ordinate the South Jersey rail services formerly operated separately by the Pennsylvania and the Reading. Permission for the transfer of the motor coach routes and equipment to the Pennsylvania-Reading Motor Lines, Inc., was granted in recent orders issued by the Board of Public Utility Commissioners of New Jersey.

Two orders relate to Reading Transportation Company routes and equipment and permit the transfer to Pennsylvania-Reading Motor Lines Inc., of R. T. C. municipal consents for the operation of ten buses between Philadelphia, Camden and Atlantic City, two buses between Philadelphia, Camden, Atlantic City and Ocean City, 12 from Atlantic City to Wildwood, 12 from Wildwood to Cape May and two from Wildwood to Avalon. Pennsylvania-Reading Motor Lines, Inc., has acquired from the Reading Transportation Company sixteen buses which the latter used on the routes involved.

Two other orders relating to the Pennsylvania-Greyhound Transit Company permit the Pennsylvania-Reading Motor Lines, Inc., to acquire the former's Philadelphia-Camden-Atlantic City operations and also its route from Stone Harbor to Sea Isle Junction. Pennsylvania-Greyhound has sold ten buses formerly used on these routes to Pennsylvania-Reading Lines, Inc.

Pacific Northwest Board Meeting

The twenty-eighth regular meeting of the Pacific Northwest Advisory Board will be held at Spokane, Wash., on June 22, with a meeting of the Agricultural Council scheduled for June 21. At a luncheon arranged by the Hoo Hoo Club of Spokane, Nathan Eckstein, president of Schwabacher Brothers & Co., Inc., Seattle, Wash., will speak on the Future of Our Railroads. The program of the board meeting includes discussion of the standardization of fresh vegetable containers, dunnage allowance in closed cars, store-door pick-up and delivery service, loss and damage prevention and co-operation with the co-ordinator. During the discussion

of standardization of fresh vegetable containers, J. D. Paul, chairman of the Transportation committee of the Pacific Coast Marketing Association, Seattle, will give the view of the shippers; G. Carlberg, Jr., president of the Inland Empire Wooden Box Association, Spokane, will speak for the container manufacturers; and Edward Dahill, chief engineer of the Freight Container Bureau of the American Railway Association, New York, will outline the work being done by transportation agencies. Dunnage allowance in closed cars will be discussed by H. N. Proebstel, traffic manager of the West Coast Lumbermen's Association, Seattle; store-door pick-up and delivery service will be discussed by C. W. Moore, manager of W. P. Fuller & Co., Spokane; and loss and damage prevention will be discussed by Gordon Tongue, treasurer and sales manager of the Superior Portland Cement Company, Seattle; while E. F. Flynn, assistant general counsel of the Great Northern will speak on co-operating with the co-ordinator. At the meeting of the Agricultural Council, the chief subject will be marketing in the Pacific Northwest, specific attention to be given to its importance to the Pacific Northwest, present day problems, grading and standardization and finance. N. A. Meyer, superintendent of transportation of the Chicago, Milwaukee, St. Paul & Pacific at Seattle, will speak on transportation improvements.

Tomato Shipments—Temperature and Condition

The Freight Container Bureau of the American Railway Association has issued an 18-page pamphlet with remarkably complete temperature diagrams covering a test shipment of four carloads of tomatoes from Harlingen, Rio Grande Valley section of Texas, to New York City, and a second test of a shipment of four carloads of tomatoes from Jacksonville, in the East Texas producing section, to Detroit, Mich. The first test was made in May, 1933, and the second test in June, 1933. The tests supplement an investigation made in October, 1932, of shipments of tomatoes from California to Kansas City, the results of which were given in an earlier report of which a brief abstract was given in the *Railway Age*, June 3, 1933.

Experience over a number of years with shipments of tomatoes in lug boxes shows that there is a much larger amount of breakage in lengthwise-loaded cars than in crosswise-loaded cars. However, the opinion has been quite generally held that if tomatoes in lug boxes are loaded crosswise the circulation of air around and into the boxes is hampered to such an extent as to have an adverse effect on the condition of the fruit. The tests in carload shipments of tomatoes were conducted to ascertain the differences in temperature and the condition of the fruit that might be effected by crosswise instead of lengthwise loaded shipments. Of the four cars shipped to New York two were loaded lengthwise and two crosswise, all four refrigerator cars were initially iced to capacity on the day of loading and cars billed to move under standard ventilation. In the test shipment to Detroit two cars were loaded lengthwise and two crosswise. None of the cars was iced and all were billed to move under standard ventilation. Each

It is *TRUE* Economy

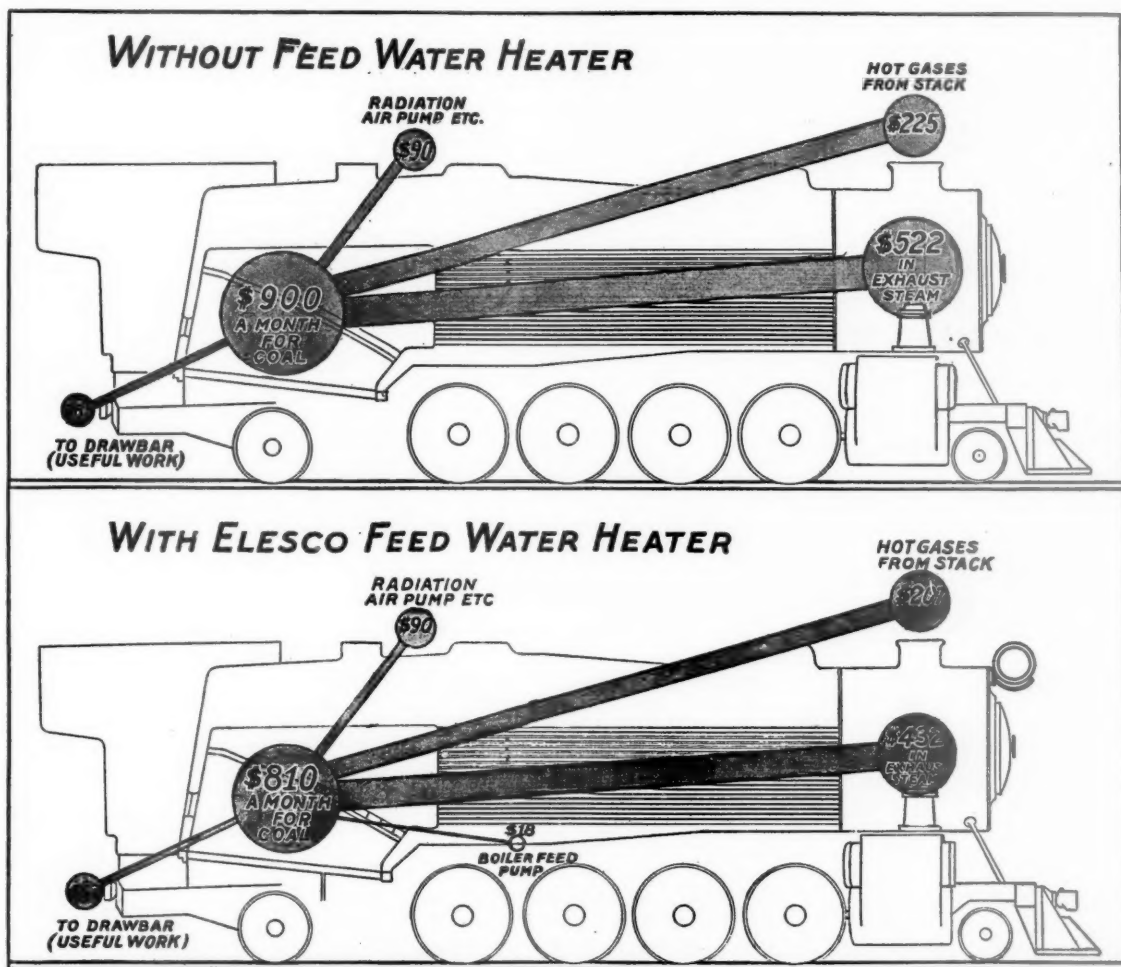
to reclaim WASTE heat

More heat escapes at the stack than is used in useful work in the locomotive cylinders. To reclaim any portion of this heat is to economize, because every unit of reclaimed heat does additional work . . . equivalent to what would be accomplished through the process of combustion and at the expense of the coal pile. An appreciable amount of heat is reclaimed and returned to the boiler again for useful work by preheating the

feed water with exhaust steam.

The water on its way to the boiler passes through tubes which are surrounded by exhaust steam. The amount of heat absorbed from the steam depends on the quantity of the water fed to the boiler and the pressure of the exhaust steam. But in any event the savings effected by reclaiming heat from the exhaust steam is profitable for most locomotives.

The apparatus to use for this purpose is the Elesco feed water heater.



HOW THE ELESKO FEED WATER HEATER REDUCES FUEL COSTS
Both Locomotives Give the Same Drawbar Pull

THE SUPERHEATER COMPANY

Representative of AMERICAN THROTTLE COMPANY, Inc.

60 East 42nd Street
NEW YORK



Peoples Gas Building
CHICAGO



A-883

Canada: The Superheater Company, Limited, Montreal

Superheaters - Feed Water Heaters - Exhaust Steam Injectors - Superheated Steam Pyrometers - American Throttles

car under test was equipped with twenty-four electric-resistance thermometers distributed through the car and so arranged that simultaneous readings could be taken at frequent intervals. Complete test data were plotted and, in addition, a thorough investigation was made of the condition of the lading when unloaded.

As a result of these tests certain definite conclusions have been reached, the principal ones being:

1. There were no appreciable differences in temperature between the fruit in cars loaded crosswise and the fruit in cars loaded lengthwise.

2. The slight differences in temperature that did exist between any of the cars under test were caused more by the differences in temperature of the fruit at the time of loading than by the loading method used.

3. The condition of the fruit at destination as shown in the inspection bureau reports and repacking plant records was to all practical purposes the same whether loaded by the crosswise method or by the lengthwise method.

4. Under normal transportation conditions either the crosswise or the lengthwise method of loading tomatoes in lug boxes is productive of the same results from the standpoint of ventilation and condition of the fruit.

Construction

CHICAGO, BURLINGTON & QUINCY.—The Illinois Division of Highways has awarded a contract to Edgar D. Otto, Inc., Downers Grove, Ill., for the construction of a highway subway to carry Route 65 under the tracks of the Burlington near Naperville. Funds for this project, which will cost approximately \$53,000, are being furnished by the federal government.

CHICAGO, MILWAUKEE, ST PAUL & PACIFIC.—The Interstate Commerce Commission has authorized this company to construct a 14-mile extension of a branch line, beginning at its present terminus at Sunset, Mont.

NEW YORK CENTRAL.—A contract has been given to the Bates & Rogers Construction Company, Inc., Staten Island, N. Y., for the elimination of the Railroad avenue crossing of this road in the Village of Palmyra, Wayne county, N. Y. This company was the lowest bidder for the work which involves the use of about 1200 tons of steel.

SPOKANE, PORTLAND & SEATTLE.—The federal government has undertaken the work of relocating and raising the grade of about five miles of this company's main line in the vicinity of the Bonneville dam in Oregon because at the old location and grade the line would be subject to overflow by the impounded waters of the dam. Bids for this work were recently received by government engineers, the low bidder being H. L. Crooks & Co., Inc., with a bid of \$339,335. It is expected that work on this project will be commenced immediately.

Equipment and Supplies

P.W.A. Loans to Railroads

An additional allotment of \$31,000 for a loan to the Gulf, Mobile & Northern was announced on June 11 by Public Works Administrator Harold L. Ickes, bringing the total to be loaned to this road up to \$1,216,000. The additional allotment will be used by the railroad to pay its track forces for laying \$185,000 worth of rails to be purchased with P.W.A. money.

The Chicago, Aurora & Elgin has applied to the Interstate Commerce Commission for approval of the expenditure of \$404,673 for which an application has been filed with the Public Works Administration, for the purchase of railroads and various track and equipment improvements.

LOCOMOTIVES

THE BELT RAILWAY OF CHICAGO has purchased and just placed in switching service at the Clearing yards, Chicago, two 100-ton, Diesel-electric locomotives. The first of these, built by the American Locomotive Company, is driven by a single 600-hp. Diesel engine, with electric equipment furnished by the General Electric Company. The second locomotive, built by the Ingersoll-Rand Company in conjunction with the General Electric Company, is driven by two 300-hp. Diesel engines.

PASSENGER CARS

Streamlined Train for Boston & Maine and Maine Central

The Boston & Maine and the Maine Central in collaboration with General Motors Corporation through its Winton Engine division, and the Budd Manufacturing Company, will join in the construction of a three-car streamlined train.

The plan will bring to the lines of these two roads, a new type of streamlined, high-speed, Diesel-propelled, passenger train, capable of a speed of 115 m. p. h., which will travel 700 mi. daily in Massachusetts, New Hampshire, and Maine, carrying passengers on regular main line runs. The railroads and the builders will conduct exhaustive studies of its operation and hope thereby to develop data which will be helpful in connection with future passenger-train design and construction.

In announcing the project, E. S. French, president of the Boston & Maine and the Maine Central, stated that the new train, with a carrying capacity of 150 passengers, will consist of three streamlined, shotweld stainless steel cars, with a Winton two-cycle, 660 h. p. Diesel engine in the forward car. The train will have complete buffet service and baggage space. He also said that the train will operate between Boston, Mass., Portland, Maine, and Bangor. It will reduce the time on the 250-mi. run between Boston and Bangor

to 4 hr. 25 min.—1 hr. 55 min. faster than at present.

The proposed schedule calls for departure from Portland for Boston about seven o'clock each morning, making the 114-mi. run in 105 min. A short time after its daily arrival in Boston, the train will leave for its 250-mi. run to Bangor. On this trip, it will become the "Flying Yankee," and will operate non-stop over the 114 mi. between Boston and Portland and then operate on a fast schedule, similar to the present run of the "Flying Yankee" over Maine Central lines between Portland, Bangor and intermediate points.

The new train will then return as the "Flying Yankee," between Bangor, Portland and Boston, again running non-stop between Portland and Boston, with arrival at the North Station in Boston in the early evening. Its final run of the day will be an early evening operation on a fast schedule between Boston and Portland.

Financing the project is to be accomplished by asking the P.W.A. for permission to use for this purpose, instead of as originally intended, \$220,000 of an allotment of \$2,628,000 already made to the Boston & Maine. The train will cost about \$275,000 and the remaining \$55,000 of its cost will be supplied by the railroad company. The train will consist of a driving unit with baggage and express compartment, a day coach, and a parlor coach with buffet dining service. An additional car is to be built for reserve use. Work on the building of the train will provide about 80,000 man-hours of labor. Governor Louis J. Brann, of Maine, was active in urging the railroads to put the new train into operation to give better service for business travel between Boston and the Maine cities and to bring the resort regions of Maine nearer to the large eastern centers of population.

IRON AND STEEL

THE READING COMPANY has placed an order for 8,000 tons of steel rail with the Bethlehem Steel Company.

THE SOUTHERN PACIFIC has ordered 265 tons of structural steel for a bridge over the Truckee river in California from the American Bridge Company.

NEW YORK CENTRAL.—A contract has been let to the McClintic-Marshall Corporation for about 1200 tons of steel to be used in grade crossing elimination work on this road at Palmyra, N. Y. The Bates & Rogers Construction Company, Inc., Staten Island, N. Y., has the general contract.

SIGNALING

THE PENNSYLVANIA-READING SEASHORE LINES has ordered from the Union Switch & Signal Company materials for an electro-pneumatic interlocking at the new Atlantic City, N. J., terminal, now being built. The entire plant will be operated by a 111-lever electro-pneumatic interlocking machine and includes 59 Style "A-5" E.P. switch and lock movements complete with cut-off valves for 53 single switches, 4 double slip switches, and 2 movable point frogs. The

Continued on next left-hand page

ANALYZE THE COST- *of unprotected Crossings*

Prevention of one serious accident will more than pay the cost of installation and maintenance of "Union" Style HC-8 Flashing Light Highway Grade Crossing Signals for a long period.

Twenty-four hour protection; economy in first cost and upkeep; reliability in operation; good-will building; postponement of grade separation, and other advantages are gained through their installation.

1881

Union Switch & Signal Co.

1934

NEW YORK

MONTREAL

SWISSVALE, PA.
CHICAGO

ST. LOUIS

SAN FRANCISCO

order includes also nine Style "T-10" hand operated switch mechanisms, 80 position light signals, 36 switch circuit controllers and 56 transformers.

DELAWARE, LACKAWANNA & WESTERN.—The American Locomotive Company has ordered from the Union Switch & Signal Company automatic cab signaling equipments for 20 type 4-8-4 locomotives, now being built for this road.

MISCELLANEOUS

THE PITTSBURGH & LAKE ERIE has ordered five more loco valve pilots from the Valve Pilot Corporation, New York, for installation on its freight locomotives.

Supply Trade

O. Kuhler, industrial designer specializing in factors affecting passenger appeal of railway cars, has opened an office at 136 Liberty street, New York. **Henry A. Nau** will be in charge of business and sales.

John C. Hopkins has been appointed district sales manager of the Cleveland, Ohio, office of the **General Refractories Company**, Philadelphia, Pa. Mr. Hopkins was formerly associated with the Central furnace division of the American Steel & Wire Company, Cleveland.

Le Carbone Company, on July 1, will move its general offices and works from Hoboken, N. J., to its new plant and general office building at Boonton, N. J. Its new plant provides facilities for greatly increasing its manufacture of carbon brushes and signal batteries.

Robert E. Brooke, president of the **Birdsboro Steel Foundry & Machine Company**, Birdsboro, Pa., has been elected chairman of the board; **John E. McCauley**, vice-president and general manager, has been elected president and **George Brooke** has been elected a vice-president.

F. Walter Blackeby has been appointed district manager for the **Dodge Steel Company**, Philadelphia, Pa., covering the Metropolitan district of New York and also New England; **Walter J. Small** is now sales engineer in charge of the development of railroad specialties, both with headquarters at 6501 Tacony street, Philadelphia.

H. C. Bughman, Jr., secretary and treasurer of the **Union Spring & Manufacturing Company**, Pittsburgh, Pa., has been elected president and treasurer, to succeed **L. G. Woods** who died in that city on May 13, following a heart attack. **A. M. McClay** has been elected chairman of the board, **W. M. McCabe**, assistant to the vice-president, has been elected vice-president, and **F. E. Schaeffer** has been elected secretary.

R. L. Templin, chief engineer of tests of the **Aluminum Company of America**,

has been chosen as the winner of the Charles B. Dudley medal for 1934. This medal is awarded annually by the American Society for Testing Materials to the author of the paper presented at the preceding annual meeting which is of outstanding merit and constitutes an original contribution to research in engineering materials. Mr. Templin's paper, presented in 1933, was entitled "The Fatigue Properties of Light Metals and Alloys." The medal will be formally awarded at the annual meeting in Atlantic City, N. J., on June 25-29.

L. S. Hamaker, sales promotion manager of the **Republic Steel Corporation**, Youngstown, Ohio, has been promoted to vice-president and general manager of the **Berger Manufacturing Company**, Canton, Ohio, a subsidiary, to succeed **J. B. Montgomery, II**, who resigned on June 1. Mr. Hamaker entered the sales department of the Berger Manufacturing Company in 1919, later transferring to the advertising department. In 1925, he be-



L. S. Hamaker

came advertising manager of the United Alloy Steel Corporation. With the formation of the Central Alloy Steel Corporation by the merging of the United Alloy Steel Corporation with the Central Steel Company in 1926, he was appointed advertising manager of the new company. When the Republic Steel Corporation was organized in 1930, he continued in that capacity. He was later appointed sales promotion manager and continued in charge of advertising.

OBITUARY

W. H. Williston, vice-president in charge of railroad sales of the Consolidated Ashcroft Hancock Company, Inc., New York, died suddenly on June 7 at the Hotel Holland, New York City. He was 54 years old.

TRADE PUBLICATION

CROMANSIL STEEL.—The Lukens Steel Company, Coatesville, Pa., has issued an 8-page pamphlet which contains a detailed discussion of the properties of Cromansil steel and its various applications. Suggested methods of welding this steel by the oxy-acetylene and arc-welding processes are also given.

Financial

ATCHISON, TOPEKA & SANTA FE.—*Abandonment.*—The Interstate Commerce Commission has authorized this company and the Oil Fields & Santa Fe to abandon a line extending from Oilton, Okla., to a connection with the Missouri-Kansas-Texas at Jennings, 7.4 miles.

BALTIMORE & OHIO.—*Proposed Financing.*—This company is considering the possibility of reducing the interest rate from 6 per cent to 5 per cent on a new issue of \$17,500,000 of notes which will be issued to meet a maturity of a similar amount on August 10, offering the present holders new notes at the new rate of interest in exchange for the 6 per cent notes which mature—with such of the new issue as is not disposed of in this manner being sold through regular marketing channels.

BOSTON & MAINE.—*P. W. A. Loan.*—This company has applied to the Interstate Commerce Commission for authority for the expenditure of \$2,683,000, to be financed mainly by a loan from the Public Works Administration, for the purchase of new equipment, including a three-unit articulated Diesel oil-electric streamlined train.

CENTRAL OF GEORGIA.—*Equipment Trust.*—The receivers have applied to the Interstate Commerce Commission for authority for an issue of \$500,000 of 4 per cent equipment trust certificates, to be offered at competitive bidding, for the purchase of 200 coal cars.

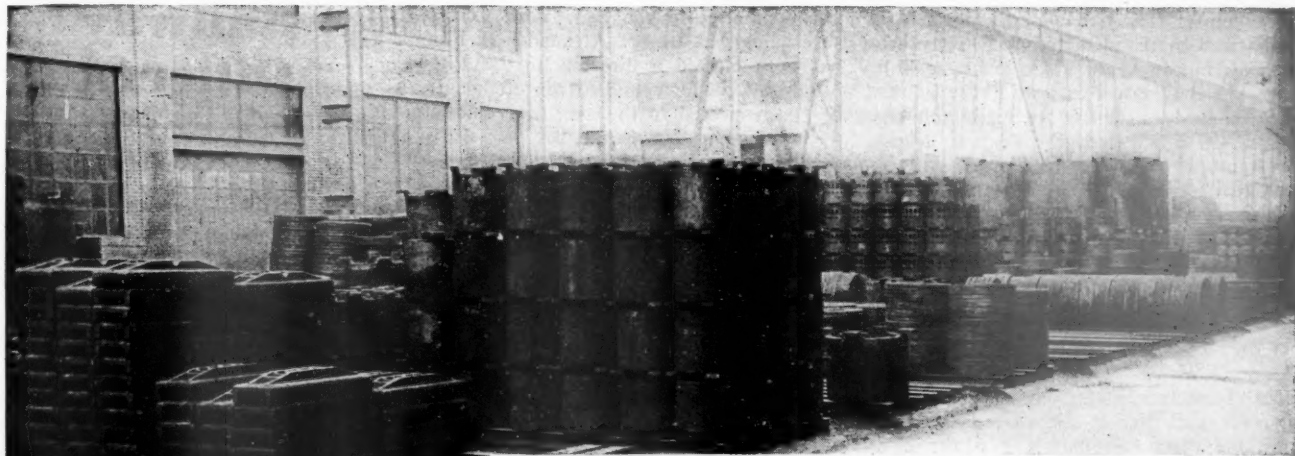
CHICAGO & NORTH WESTERN.—*P. W. A. Loan.*—This company and the Escanaba, Iron Mountain & Western have applied to the Interstate Commerce Commission for authority to issue \$3,500,000 of first mortgage 4 per cent bonds of the Escanaba company, to be delivered to the Public Works Administration in connection with a loan of that amount for the construction of an ore dock at Escanaba, Mich. The bonds are to be guaranteed by the North Western, which asked authority to guarantee the bonds, to pledge \$1,000,000 of its first and refunding 6 per cent bonds as collateral for their payment, and for authority to lease the docks.

CHICAGO, BURLINGTON & QUINCY.—*Abandonment.*—The Interstate Commerce Commission has authorized this company to abandon a line extending from Shabone, Ill., to Paw Paw, 6.9 miles.

CHICAGO, BURLINGTON & QUINCY.—*Dividend.*—The directors of this company have declared a dividend of \$2 per share on its common stock—this being the first payment since last December when \$3 was paid.

CHICAGO, BURLINGTON & QUINCY AND WABASH.—*Abandonment and Trackage Rights.*—The Interstate Commerce Commission has authorized the former company to abandon its line extending from a point near Hamilton, Iowa, to a point near Tracy, 8.3 miles, and to operate under trackage rights over the Wabash between

Continued on next left-hand page



HSGI ENDORSED On Most Railroads

THE storekeepers of American railways need no introduction to castings stamped with the HSGI trademark.

The long service built into HUNT-SPILLER *Air Furnace* GUN IRON reduces renewals. Less stock has to be carried for protection. Records show lower costs for material handling. Complaints from the mechanical department are conspicuous by their absence.

High standard of Economy and Service are obtained by the use of HSGI for the parts listed below.

HSGI

Reg. U. S. Trade Mark

Cylinder Bushings
Cylinder Packing Rings
Cylinder or Piston Bull Rings
Pistons
Valve Bushings
Valve Packing Rings
Valve Bull Rings
Crosshead Shoes
Hub Liners
Shoes and Wedges
Floating Rod Bushings

Parts Finished For
Application

Dunbar Sectional Type Packing
Duplex Sectional Type Packing
for Cylinders and Valves
(Duplex Springs for Above
Sectional Packing)
Cylinder Snap Rings
Valve Rings All Shapes

HUNT-SPILLER MFG. CORPORATION
J.G. Platt, Pres. & Gen. Mgr. V.W. Ellet, Vice-President

Office & Works

383 Dorchester Ave.

South Boston, 27, Mass.

Canadian Representative: Joseph Robb & Co., Ltd., 70 North Bank Rd., Montreal, P. Q.

Export Agent for Latin America:

International Rwy. Supply Co., 30 Church Street, New York, N. Y.

HUNT-SPILLER GUN IRON

Air Furnace

these points. The latter company has been authorized to abandon its line between Albia and Hamilton, 11.2 miles, and to operate over the Burlington between those points. A 2,900-ft. segment of the Burlington and a 3,450-ft. segment of the Wabash trackage, authorized to be abandoned, will be retained for joint use as passing tracks. Necessary connecting tracks, totaling 3,720 ft., will be laid. It is estimated that each road will save \$15,000 annually by the arrangement without diminution in service to the public.

CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC.—Notes.—This company has applied to the Interstate Commerce Commission for authority to pledge \$6,000,000 of first and refunding mortgage 6 per cent bonds as collateral for \$3,000,000 of short term notes to various banks.

DENVER & RIO GRANDE WESTERN.—Abandonment.—The Interstate Commerce Commission has authorized this company and the Colorado & Southern to abandon a line owned by the latter company and operated by the former extending from Parlin, Colo., to Quartz, 18.5 miles. Authority to abandon the line was granted last year, but this order was vacated and a rehearing ordered upon the request of protestants. The new order reaffirms the decision handed down in the first one.

GREAT NORTHERN.—Abandonment.—This company has applied to the Interstate Commerce Commission for authority to abandon two branch lines, from Curlew, Wash., to the international boundary, 14.28 miles, and from Molson, Wash., to the boundary, 2.41 miles.

KENTUCKY & INDIANA TERMINAL.—Bonds.—The Interstate Commerce Commission has authorized this company to pledge and repledge all or part of \$511,000 of its 4½ per cent first mortgage bonds as collateral security for short term notes at a ratio of not more than \$125 of bonds (market price) to each \$100 (face amount of notes).

LEHIGH VALLEY.—Interlocking Director.—The Interstate Commerce Commission has announced the withdrawal and dismissal of the application of Walter S. Franklin for authority to hold the position of director of the Lehigh Valley.

MINNEAPOLIS, NORTHFIELD & SOUTHERN.—Bonds.—The Interstate Commerce Commission has authorized this company to extend from one to five years the maturity date of \$250,000 of 5-year convertible 6 per cent notes which will fall due on September 1.

MISSOURI-ILLINOIS.—Valuation.—The Interstate Commerce Commission has issued a final valuation report as of 1927 finding the final value for rate-making purposes of the property owned and used for common-carrier purposes to be \$5,600,000.

NEW YORK CENTRAL.—New Director.—W. P. Chrysler has been elected a director of this company, succeeding C. B. Seger, retired. Mr. Chrysler will resign his directorates in several other railroads. Robert F. Loree has been elected to the execu-

tive committee of the New York Central, succeeding Mr. Seger. Alexander B. Flinn has been elected a director of the Pittsburgh & Lake Erie, and Edwin Hodge, Jr., has been elected to the executive committee, succeeding Mr. Seger.

MISSOURI PACIFIC.—Abandonment.—The trustees have applied to the Interstate Commerce Commission for authority to abandon a branch line from Delight, Ark., to Pike City, 7.5 miles.

NEW YORK, NEW HAVEN & HARTFORD.—Abandonment.—The Interstate Commerce Commission has authorized this company to abandon a line extending from Woonsocket Junction, Mass., to Bellingham Junction, 4.9 miles.

NORTON & NORTHERN.—Abandonment.—This company has applied to the Interstate Commerce Commission for authority to abandon its line from Wise, Va., to Bear Creek yard, 5.5 miles.

OREGON, CALIFORNIA & EASTERN.—Valuation.—The Interstate Commerce Commission has issued a report finding the final value for rate-making purposes of the property owned and used for common-carrier purposes as of December 31, 1928, to be \$1,500,000.

OREGON-WASHINGTON.—Abandonment.—This company has applied to the Interstate Commerce Commission for authority to abandon its line from Enaville, Idaho, to Prichard, 20.64 miles.

ST. LOUIS-SAN FRANCISCO.—Abandonment.—The Interstate Commerce Commission has authorized this company and its trustees to abandon a branch extending from Bono Branch Junction, Ark., to Algoa, 35.6 miles.

SOUTHERN PACIFIC (of Mexico).—Abandonment.—The Department of Communications of Mexico has authorized this company to abandon a branch line extending from Navojoa, Sonora, to Alamos, 62.3 kilometers (39.7 miles).

WABASH.—Abandonment.—The receivers have applied to the Interstate Commerce Commission for authority to abandon the line from Shumway, Ill., to Altamont, 9.48 miles.

WASHINGTON & OLD DOMINION.—Abandonment.—This company has applied to the Interstate Commerce Commission for authority to abandon its line from Thrifton, Va., to Great Falls, 12.1 miles.

Average Prices of Stocks and of Bonds

	June 12	Last week	Last year
Average price of 20 representative railway stocks.	43.52	42.34	40.63
Average price of 20 representative railway bonds.	78.56	78.04	68.94

Dividends Declared

Allegheny & Western.—\$3.00, semi-annually, payable July 2 to holders of record June 20.
 Canada Southern.—\$1.50, semi-annually, payable August 1 to holders of record June 29.
 Chicago, Burlington & Quincy.—\$2.00, payable June 25 to holders of record June 16.
 Old Colony.—\$1.75, quarterly, payable July 2 to holders of record June 18.
 Pittsburgh & Lake Erie.—\$1.25, semi-annually, payable August 1 to holders of record June 29.
 West Jersey & Seashore.—Common, \$1.50, semi-annually, payable July 2 to holders of record June 15.

Railway Officers

EXECUTIVE

F. M. Hicks, vice-president (traffic) of the Gulf, Mobile & Northern, has been elected executive vice-president, with headquarters as before at Mobile, Ala.

C. A. Pinkerton, general manager of the Detroit & Mackinac, with headquarters at Tawas City, Mich., has been elected also vice-president of the company in addition to his duties as general manager.

Changes in Co-Ordinator's Organization

Co-ordinator Eastman announced on June 11 that V. V. Boatner, now Western Regional Director for the Federal Co-ordinator of Transportation, has been given general supervision of all the work which is being carried on by the three regional directors in the East, South, and West. This work has to do with the study of possible economies in operation which are localized to particular places, lines, or territories, such as terminal unification, joint use of various facilities, pooling of train service, the elimination of wasteful routes, and the like. He will have the title of director, Section of Regional Co-ordination. Mr. Boatner will be succeeded as Western Regional Director by J. M. Baths, who leaves the position of vice-president of the Chicago Great Western, in charge of operation, to undertake this work. J. P. Cowley, who has been assistant regional director in the western region, located at Dallas, Texas, has found it necessary to return to his former work with the Atchison, Topeka & Santa Fe. He will be succeeded by W. F. Kirk, who has been general superintendent, western district, of the Missouri Pacific.

Long Becomes Western Maryland Chairman; Brown Elected President

Maurice Alvin Long has been elected chairman of the board of the Western Maryland, with headquarters at Baltimore, Md., and Charles W. Brown, vice-president and general manager, has been elected president, to succeed the late George P. Bagby, with headquarters at the same point.

Mr. Long was born on October 25, 1875, near Middletown, Ohio. He entered railway service in June, 1899, with the Baltimore & Ohio, remaining with that road for approximately twenty years in various positions dealing with building construction. In September, 1919, Mr. Long resigned from the service of the B. & O. to organize an engineering and construction company known as the M. A. Long Company, with offices in Baltimore, Chicago and Allentown, Pa. He has been a director and member of the executive committee of the Western Maryland since 1931. Mr. Long is president of the Maryland chapter of the Associated General Contractors of America, is a member of the board of directors of the Baltimore Association of Commerce, and Equitable Trust Company,

the New Amsterdam Casualty Company, and the Fidelity and Guaranty Fire Corporation, all of Baltimore, Md. He was elected a member of the American Institute of Architects in 1908 and has been a member of the American Society of Civil Engineers since 1909. He is also a member of the American Railway Engineering Association and is national counsellor of the Chamber of Commerce of the United States.

Charles W. Brown was born at Fort Gaines, Ga., on January 10, 1880. He entered railway service in the engineering department of the Central of Georgia in September, 1898. From 1900 to 1903, he was transitman on the Baltimore & Ohio and from the latter date until 1904 he served as resident engineer for the same road. Mr. Brown was assistant engineer for the Atlantic Coast Line from August, 1904, to August, 1906, at which time he was appointed engineer of roadway for the same road. He held the latter position until May, 1908, when he became locating engineer for the Central of Georgia. In 1910 Mr. Brown was appointed superintendent of the Hall Parker Construction Company, which position he held until 1911 when he entered the service of the Lehigh & New England as engineer, maintenance of way. In December, 1913, Mr. Brown became assistant superintendent of the latter road, serving in that position until March, 1917, when he was further advanced to the position of superintendent. In June, 1927, he was promoted to general superintendent of the same road and in November, 1930, he was appointed general manager of the Western Maryland. Mr. Brown served in the latter capacity until May, 1933, when he became vice-president and general manager, the position he held at the time of his election to the presidency of the road.

FINANCIAL, LEGAL AND ACCOUNTING

S. F. Bratager has been appointed general claim agent of the Minneapolis, St. Paul & Sault Ste. Marie, with headquarters at Minneapolis, Minn.

Norris G. Thompson, chief investigator in the claim department of the Norfolk & Western, with headquarters in Roanoke, Va., has been appointed assistant claim agent, with the same headquarters, to succeed **C. R. Venable**, deceased.

W. V. Struby, president of the Missouri Southern, with headquarters at Chicago, has also been elected treasurer. **J. A. McCoy**, assistant to the president, with headquarters at Chicago, has been appointed assistant secretary and assistant treasurer, with headquarters at Denver, Colo.

OPERATING

Effective June 1, the position of general superintendent of telegraph and telephone of the New York Central Lines at New York has been discontinued.

A. G. Whittington, superintendent of the Joint Texas division of the Ft. Worth

& Denver City, has had his headquarters moved from Teague, Tex., to Houston.

C. B. Forte has been appointed superintendent of the Southern division of the Colorado & Wyoming, with headquarters at Segundo, Colo., succeeding **J. C. Lord**, deceased.

L. C. Hayman, assistant superintendent, sleeping and dining car department, of the Grand Trunk Western, with headquarters at Battle Creek, Mich., has been appointed agent for the same department with the same headquarters, and the position of assistant superintendent has been abolished.

J. W. Rea, superintendent of the Arkansas division of the Missouri Pacific at Little Rock, has been appointed acting general superintendent of the Western district at Kansas City, Mo., succeeding **W. F. Kirk**, who has been appointed assistant western regional director at Dallas, Tex., for the Federal Co-ordinator of Transportation. **J. Davis**, district engineer at Little Rock, has been appointed acting superintendent at the same point, replacing Mr. Rea.

TRAFFIC

J. F. Lecanda has been appointed to the newly-created position of general agent for the Illinois Central at Mexico, D. F.

T. W. Scott has been appointed to the newly-created position of general agent at Philadelphia, Pa., for the Missouri-Kansas-Texas.

Joseph G. Wheeler, city ticket agent for the Western Pacific at San Francisco, Cal., has been promoted to general agent, passenger department with the same headquarters, succeeding **F. R. Kane**, who has resigned.

Carl A. Riebling has been appointed division passenger agent for the New York Central, with headquarters at Buffalo, N. Y., in charge of the Buffalo territory, succeeding **Walter S. Randolph** who retired on June 1.

E. R. Roby, commerce agent for the Louisville & Nashville, has been appointed assistant to the vice-president, with headquarters as before at Louisville, Ky. **C. A. Waggener** has been appointed commerce agent at Louisville to succeed Mr. Roby.

J. J. Grogan, general freight agent of the Atchison, Topeka & Santa Fe, at Chicago, has been promoted to assistant freight traffic manager with the same headquarters, succeeding **Joseph H. McCabe**, deceased. **T. J. Hughes**, division freight agent at Chicago, has been promoted to general freight agent with the same headquarters, to succeed Mr. Grogan.

Mr. Grogan was born at Chicago and began his business career with Swift & Co., later serving for a short time with the Chicago & Alton (now the Alton). He entered the service of the Santa Fe in 1903 as a stenographer in the office of the division freight agent at Chicago, later occupying the position of bill-of-lading clerk, rate clerk, city freight agent and chief clerk in the same office, being appointed to the latter position in 1914.

While holding the position of city freight agent Mr. Grogan attended evening classes at Loyola University law school and following his graduation he was admitted to the bar. Shortly after the entry of the United States into the World war, Mr. Grogan was assigned to service with the traffic department of the U. S. Food



J. J. Grogan

Administration, being appointed assistant manager of inland traffic for the Food Administration in February, 1918. A year later he returned to Chicago and was assigned to service with the Western District Freight Traffic committee, where he remained until the end of federal control of the railroads in March, 1920, when he returned to the Santa Fe as foreign freight agent at Chicago. Mr. Grogan was advanced to general freight agent in 1933, which position he was holding at the time of his recent promotion.

Mr. Hughes has been connected with the Santa Fe for 32 years. He was born at Chicago in 1887, and entered the service of the Santa Fe on August 11, 1902,



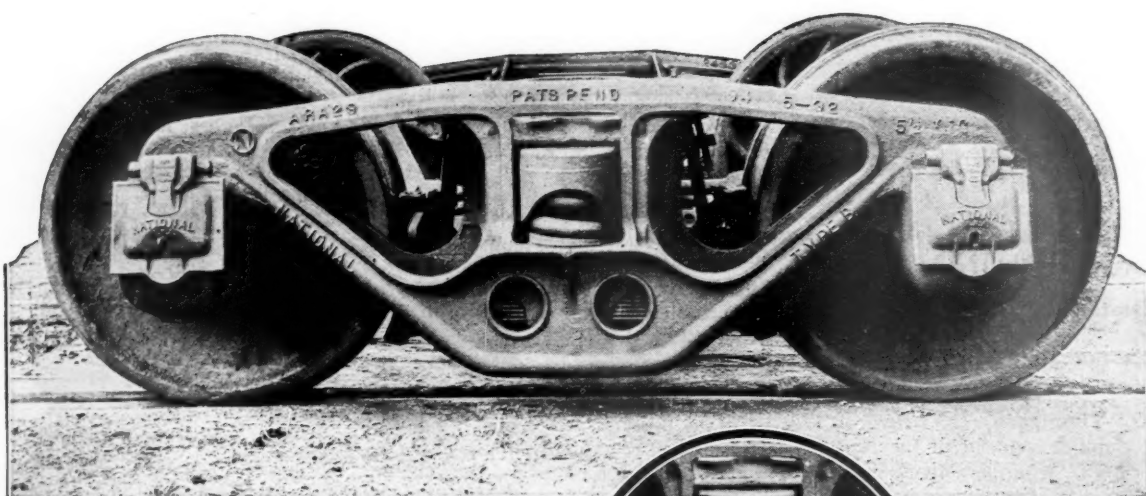
T. J. Hughes

in the general agent's office at Chicago, holding various clerical positions until May 1, 1911, when he was advanced to soliciting freight agent working out of the same office. On October 1, 1918, Mr. Hughes was appointed chief clerk in the division freight office at Chicago, and on July 1, 1929, he was advanced to division freight agent, which position he was holding at the time of his recent promotion to general freight agent.



National Type "B" Truck with "Coileaf" Springs

No Critical Speed Oscillations To Damage Lading



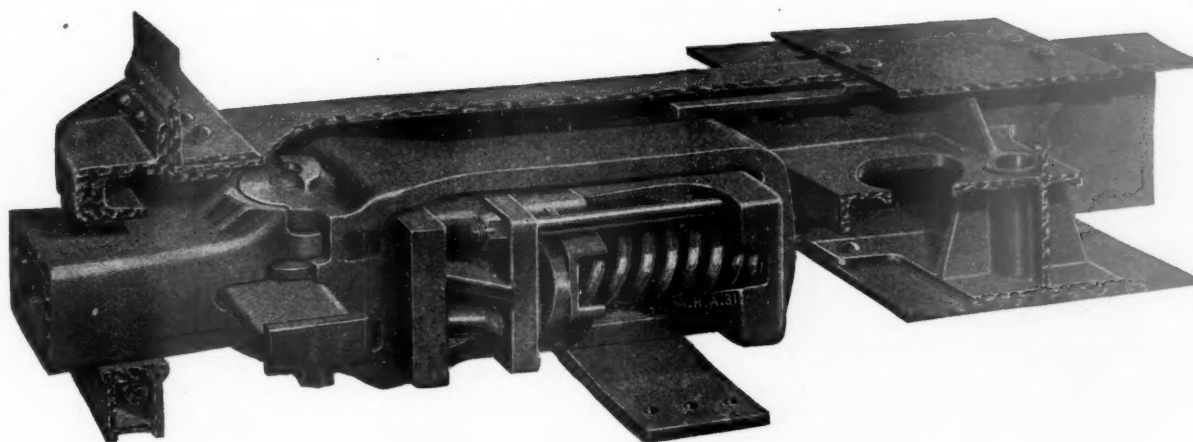
Full Coil and "Coileaf" Springs
are interchangeable in National
Type "B" Trucks



NATIONAL MALLEABLE AND STEEL CASTINGS CO.
General Office — Cleveland, O.

Sales Offices: New York, Philadelphia, Chicago, St. Louis, San Francisco
Works: Cleveland, Chicago, Indianapolis, Sharon, Pa., Melrose Park, Ill.

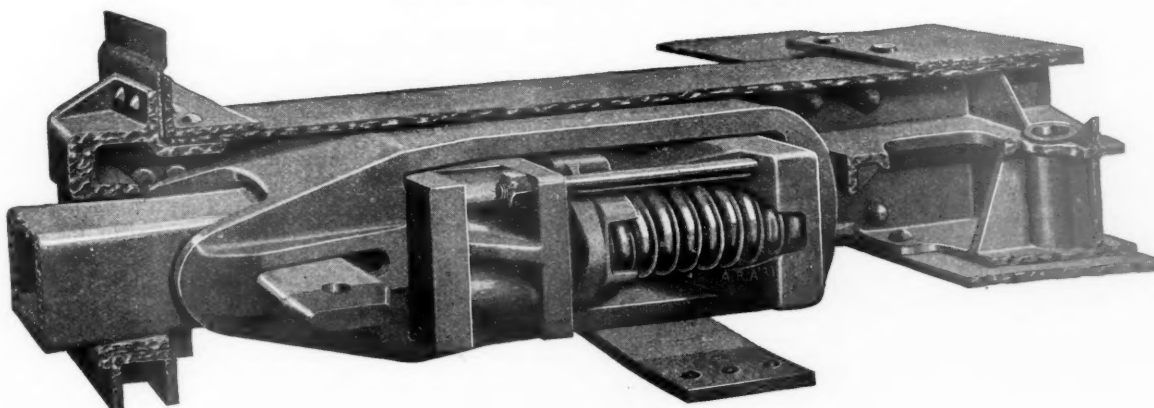
Ideal, Compact Applications



A. R. A. Certified M-17-A. Draft Gear

A. R. A. Alternate Standard "E" Coupler
with Swivel Shank

A. R. A. Alternate Standard Swiveling
Cast Steel Yoke



A. R. A. Certified M-17-A. Draft Gear

A. R. A. Standard "E" Coupler

A. R. A. Standard Vertical Cast Steel Yoke

NATIONAL MALLEABLE AND STEEL CASTINGS CO.

General Office — Cleveland, O.

Sales Offices: New York, Philadelphia, Chicago, St. Louis, San Francisco
Works: Cleveland, Chicago, Indianapolis, Sharon, Pa., Melrose Park, Ill.

C. F. Doran, whose appointment as general passenger agent of the New York, New Haven & Hartford, with headquarters in New York, was announced in the *Railway Age* of June 2, page 828, was born in Haverstraw, N. Y., on October 9, 1873. He began his railway career with the New Haven on June 19, 1897, as agent at Piers 19 and 40 North river, New York. He served in that capacity for twelve years, being transferred to Ellis Island, N. Y., in 1909. The following year he became city ticket agent in New York and in September, 1918, he was appointed manager of the New Haven's consolidated ticket office at the same point. In October, 1919, he became agent at



C. F. Doran

Grand Central Terminal, N. Y., remaining in that position until January, 1928, at which time he was promoted to the position of assistant general passenger agent at New York, the position he held at the time of his recent promotion.

PURCHASES AND STORES

F. V. Burton, assistant general storekeeper on the Canadian National, with headquarters at Winnipeg, Man., has been transferred to Toronto, Ont., to replace **S. E. Keillor**, who, in turn, has been transferred to Winnipeg.

OBITUARY

John C. Lord, superintendent on the Colorado & Wyoming, with headquarters at Segundo, Colo., died on May 28.

Frank W. Irland, who retired in 1933 as assistant secretary of the Missouri Pacific died of heart disease at Mission, Tex., on May 12, at the age of 73 years.

H. C. Donecker, vice-president of the Cincinnati & Lake Erie before it went into receivership in 1932, died on May 27 at Dayton, Ohio. Mr. Donecker was 58 years of age.

J. M. Fleming, assistant secretary and transfer agent of the New York, Ontario & Western, with headquarters at New York, died at his home in Clifton Manor, S. I., on June 7 after a six months' illness. Mr. Fleming had been with the road

since 1886 and had been transfer agent since 1930.

Philip J. Reilly, retired auditor of passenger accounts of the Erie, died at his home in Scarsdale, N. Y., on June 12. Mr. Reilly was 78 years of age and prior to his retirement had been in the service of the Erie for approximately 61 years.

Grover B. Simpson, who retired in 1928 as general manager of the American Railway Express Company, died at his home at Chicago on May 29. At the time of his retirement, Mr. Simpson had been connected with this company and one of its predecessors, Wells, Fargo & Co., for 51 years. He was born on February 28, 1858, in Oregon and entered the service of Wells, Fargo & Co. on November 1, 1877, as a messenger. Six years later Mr. Simpson was appointed agent at Spokane, Wash., and after serving in various other positions he was appointed general agent at Kansas City, Mo., in May, 1891. In November of the same year he was promoted to superintendent at Omaha, Neb., later holding this position at St. Louis, Mo., and Chicago. On May 1, 1909, Mr. Simpson was advanced to general superintendent at Chicago, being transferred to St. Louis on June 1, 1913. On July 1, 1918, when the various express companies were consolidated under the name of the American Railway Express Company, Mr. Simpson was appointed general manager of the new Company, with headquarters at Chicago, holding this position until his retirement on February 28, 1928.

James Keeley, vice-president of the Pullman Company, with headquarters at Chicago, died on June 7 at his home at Lake Forest, a suburb of Chicago, following an illness of several months. Mr. Keeley was born at London, England, on October 14, 1867, and came to the United States while still a youth, working as a reporter on various newspapers for several years. In 1889, he joined the staff of the Chicago Tribune as a night police reporter, and while serving with this paper he became famous as a newspaperman, being promoted successively through the



James Keeley

positions of night editor, city editor, managing editor and general manager. In 1914, Mr. Keeley purchased the Record-Herald and the Inter Ocean, two Chicago papers, which he combined under the name

of the Record-Herald and Inter Ocean. Four years later he sold his holdings to the Hearst interests and entered the service of the government in the publicity campaign that was conducted during the World war, later re-entering private business as an advertising and publicity counsel. In 1922 Mr. Keeley entered the service of the Pullman Company as assistant to the president, being made a vice-president in 1930, the position he was holding at the time of his death.

Harry Allen Currie, electrical engineer, New York Central, died of angina pectoris on June 9, at his home in Flushing, Long Island, N. Y. Mr. Currie was born in Maitland, Nova Scotia, on August 25, 1872. He went to sea as a young man,



H. A. Currie

cruising around the world on the square-rigged sailing vessel Calburga, rising to the rank of second officer. He left the ship at New York and joined the old Brooklyn Rapid Transit Company, as a switchboard operator in the Kent Avenue power station, Brooklyn, N. Y. Meanwhile, he acquired a technical education by attending Cooper Union at night. In June, 1903, he entered the service of the New York Central as assistant engineer, and was placed in charge of the experimental track at Wyatts, near Schenectady, N. Y., where the original New York Central electric-passenger locomotive No. 6000 was developed. Thirty-five of this type of locomotive were used between Grand Central station and High Bridge in 1906, when the New York Central electrification was inaugurated. In 1906, Mr. Currie was transferred to New York, in charge of the erection of transmission lines and installation of third-rail and track bonding, under J. D. Keiley, then electrical engineer. He was promoted to assistant electrical engineer in February, 1907, and on Mr. Keiley's death, in 1910, took over his duties, serving under E. B. Katte, then chief engineer of electric traction. In August, 1928, after Mr. Katte's death, Mr. Currie was made electrical engineer, which position he held until his death. As electrical engineer, Mr. Currie had charge of the electrical work on the West Side, New York City, improvement, now nearing completion, and acted as consulting engineer for the Cleveland Union Terminal electrification. He was a Fellow of the American Institute of Electrical Engineers.